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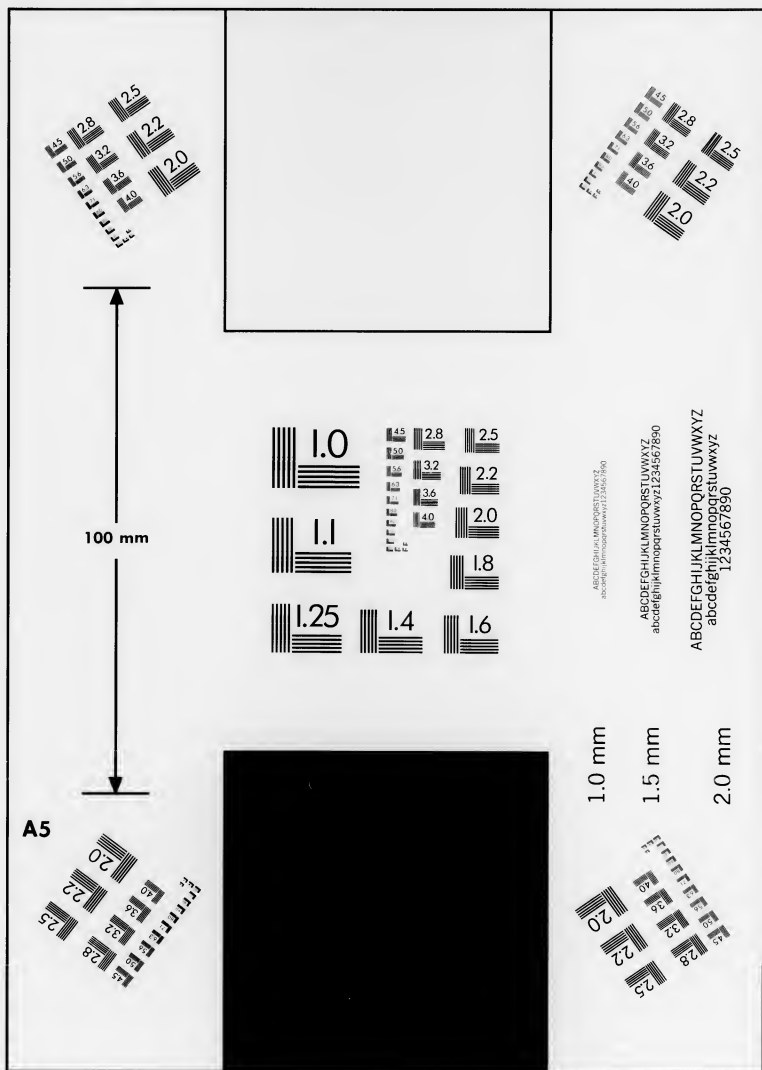
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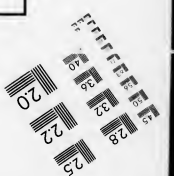
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Utilitarian Economics

A Series of Fifty Studies
in Utilitarian Values

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Utilitarian Economics

A SERIES OF FIFTY STUDIES IN
UTILITARIAN VALUES

Authors:

F. WESLEY PHELPS

J. BUCKNER MYRICK

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The School of Utilitarian Economics

826 Seaboard Bldg.

Seattle, Wash.

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Preface

The purpose of these studies in Utilitarian Economics is to put the student in touch with certain basic truths which inhere in our daily experiences and lie close to the human heart.

Economics is the broadest of our sciences.

It is the *science of everything*, of industry, of business, of law, of medicine, of religions and moralities even, and *equally interests and involves everybody*. Indeed, it is not possible to discuss any human institution, or the life and work of any individual, whether of humble or of high station, without considering the economic value of the thing or person we discuss; and *economic values* are important to us in proportion to their usefulness.

In this series of Fifty Lessons we have sought to make Economics as simple as the routine of each man's day, whether in field, factory, mine or elsewhere, for, in the final reckoning, these activities of busy men, workers and employers alike, make up the sum of the science we are discussing.

We want to help men and women find themselves, and to understand their rights and their responsibilities as members of organized society.

There are many persons and many things around us.

The human family was well on its way when we arrived. Men and women, toiling and sacrificing through many centuries, helped to make the way easier for us. Sometimes it seems that most of the necessary things have already been done, so far as our well-being is concerned, and that there isn't a great deal left for us to do, except, perhaps, to show our gratitude by wisely using what we have.

If we are too much inclined to quarrel about the existing economic order, it is mainly because we do not understand. Let us be fair. Let us face the situation as it is, study it, find ourselves, our places and our duties in society, and then, gathering courage from a new and broader understanding of life in all its relations, address ourselves seriously to the problem of making ourselves and our neighbors useful, prosperous and happy.

Such is the supreme object of Utilitarian Economics as outlined in these lessons, and if we can help any considerable number of

students to realize the beauty and value of this healthier and happier view of human relations we shall feel amply rewarded.

In the first series of lessons we shall discuss Man. You are one of the men we have in mind. All we say about man applies to *you*.

In the second series of lessons we will talk about Tools—*your tools*, the tools you are using in your effort to realize your life mission. And in subsequent lessons we shall consider what *you*, the *Man*, have been doing with your tools, what you have been making with them, how much you are doing for yourself and for society in return for what has been done for you. These subsequent lessons will deal with Production, Wealth and Society, and will help to perfect a comprehensive outline of Economics.

The Story of the Detached Man

An Introduction to Utilitarian Economics—Man Considered as Wholly Detached, Having No Connection With Anybody or Anything—Some of His Embarrassments—What He Finds in the World—Nothing Yet Contributed By His Talent or Energy—Theory of Worker's Right to Total Product of His Labor Tested—How the Value of Worker's Labor is Divided Between Yesterday, Today and Tomorrow—Our Obligations to Society for What We Find Ready for Our Use and Comfort.

Lesson No. 1

Among current and popular errors in thinking and talking on economics is the notion that a man who labors is entitled to the full product of his labor.

Put in another way, the idea is that no man should make a profit out of another man's work.

This error underlies the whole attack on the wage system, and furnishes a sort of ground-work for the philosophy of radical economics.

The number of men who very earnestly believe they should reap the full benefit of all they produce is very large.

Behind this error the fight of the workers in America, and in other countries also, is waged for the possession and ownership of all the tools and agencies used in the production and distribution of wealth. It is the supreme and final motive of the whole conflict.

Our purpose in the first lesson will be to put this notion to a practical test.

Errors become very useful when we know them as errors. But errors are very harmful when we make them the basis for opinions on subjects of profound and intimate concern to us, and they become even more harmful when we permit them to determine our course of conduct in our relations to our fellows.

It may help us to a better understanding of the forces and problems we are to discuss in this series of studies in Popular and Simplified Economics if, at the beginning, we use our imagination for purely illustrative purposes.

We will imagine an *impossible man* in a *possible situation*.

We will speak of him as the Detached Man. Detached means not attached. Our Detached Man, therefore, has no connection with anything or anybody. He is simply here. But he is a complete man. He has ripened into the fullness of his powers; his blood is clean, warm, buoyant; his muscles are hard, full, flexible; his mind is alert, hopeful, and he is contemplating the problem of fitting himself into our scheme of civilization—a very practical problem, and one with which our own experiences

have made us familiar; indeed, not only was it the first problem to challenge our attention when we found ourselves, for the first time, facing the constant and pressing issues of the struggle for existence, but, in the midst of many changes, we have each day found the same problem looming to question us as to our fitness to go on with the fight for survival, and the light and beauty of a successful life.

Contemplating this mighty problem, our Detached Man finds himself in the presence of a vast and beautiful estate. Forests have been mowed down; lands cleared, ditches for drainage and canals for irrigation have been dug; thrifty tillers have furrowed the soil; seeds have been sown, and, responsive to these touches of intelligent industry, the fields are smiling with ample crops. Orchards are colorful with clusters of ripening fruits. Contented herds are browsing in green pastures. Happy workers are singing as they dream of the harvests.

Woods and stones, and clays and metals have been fashioned into many useful shapes.

Piles of gold and silver, of copper and iron, of coal and other things have been culled from nature's storehouse and con-

verted into agencies of convenience and comfort.

Great and powerful natural forces have been harnessed. The winds, the flow of streams and the movements of the tides are constantly contributing to the useful energies of mankind.

Wild animals and fowls have been tamed, plants domesticated, and for ages have ministered to the needs and wants of humanity.

Out of the raw, rough stuff of the wilderness, beautiful cities have been carved, and stand, like exquisite etchings, against the skyline.

Roads have been built.

Bridges span our rivers and low places. Tunnels have been bored through mountains. Combining intelligence and industry, we have ironed out many of the rough places in our main traveled roads.

Other lines of communication, railroads, stage lines, air routes, steamships and steam boats are also open. Besides there are lines for the transmission of messages—telegraphs, telephones, cable lines and wireless systems.

Our Detached Man finds society organized, governments established and functioning, and an endless variety of things, in-

stitutions, forces and customs all contributing to the well-being and happiness of the human family.

We have assumed the existence of a *complete man*, a person arrived at maturity, able to think, talk and act with intelligence. We shall take no more than passing note of the obligations he has already incurred; the debts he owes for the care and attention bestowed upon him in infancy and childhood; for the food, and clothes, and shelter he has enjoyed; for the language which enables him to make known his wants and opinions; for the science of numbers which enables him to count; for the alphabet which has helped him to know and understand words and read books; for calendars that divide time into years, weeks and days; for clocks that tick off the hours, and minutes, and seconds of the day; and for many other things of constant use in our daily lives. These things, like the pavement on which he walks as he strolls through the city, are here and he may use them whether he works or idles, though he has had nothing to do with discovering or making any of these conveniences and necessities.

Our test of the Detached Man, and his notion that a man who works is entitled to

the full product of his labor, will have to do solely with Agriculture, Industry and Commerce, for his problem is to fit himself, according to his aptitudes, into one of these spheres of useful endeavor.

Our friend is without food, without clothes, without shelter, and without tools with which to provide himself with these things.

Food is an animal's first want. It is the infant's first demand when he comes pulling into the world of action. But if our friend goes to the butcher or baker he will find that his own economic philosophy has raised a barrier against him. The bread in the baker's window is not the product of our Detached Man's labor. It is not even the baker's. The baker merely finished the processes of production. He mixed and kneaded the dough, and baked it. The baker did not grind the wheat grains into flour; nor did he build the mill or make any of the machinery that made this result possible. He did not plant, cultivate and harvest the wheat. He had nothing to do with transporting either the wheat or the flour, nothing to do with any of the things and forces that made transportation possible. He did not produce the yeast or baking powder, the sugar, the salt or the fats

he has used in the process of converting wheat flour into bread. He did not make the pans and ovens in which his bread is baked, nor did he produce any of the materials entering into the manufacture of these necessary things. Nor did he produce any of the agencies that provide him with the heat necessary to bake his bread.

The hands of many men, toiling through a long series of years, reaching back to the first human being who first used grains of wheat as food and thus began the processes of domesticating a wild plant, have made possible the production of this loaf of bread.

Indeed, if we should attempt to write a complete and truthful history of so simple and common a thing as a loaf of bread, it would be not only a history of all the more useful forces of civilization, but a history of natural forces also.

Yet, nowhere along this far-reaching line, nowhere in the extensive and complicated processes finally to end in the production of a loaf of bread, has our friend contributed the weight of his hand, an ounce of energy, or the value or influence of a single idea.

When we pass from the baker's to the butcher's, we find our Detached Man facing the same insurmountable barriers.

He had no part in any of the long processes that have made it possible for the butcher to conclude the production of the pot-roast or the steak.

Or if he needs clothes, he will find that even an humble worm, culling the fine fibre of mulberry leaves and making a silken nest of it, has contributed more toward clothing the human family than he has contributed, for nowhere in the infinite processes that have resulted in the production of clothes to keep the body warm can there be found the impress of his hands or his brain.

Once again, therefore, his own economic philosophy looms as a barrier to stay his hands when he reaches for what he wants, needs and must have, if he is to thrive and hold his own in the raw, hard struggle for the right to survive.

In the presence of such helplessness as we find in the assumed case of our Detached Man in his efforts to procure food and clothing, our first natural thought is of Tools. Strip a strong, healthy, intelligent man of clothes and deny him food, but give him tools, and he might be able to provide what he needs for sustenance in a raw environment.

But our friend had nothing to do with making the tools we use.

These tools, too, came down to us through long ages of human effort, labor and sacrifice, and make up the biggest and most important thing of our inherited estate.

If our Detached Man believes he is entitled to the full product of his own labor, then he must also believe that he is not entitled to any of the products of any other man's labor, whether Physical or Mental.

The plain, inevitable logic of the theory is the *Complete exclusion* of the Detached Man from the benefits of the things we have inherited.

Our economic obligations fall into three grand periods of time: Yesterday, Today and Tomorrow; and any theory which fails to take this vital fact into account is unsound. Out of Today's labor, in whatever sphere we may expend it, we must make a fair return for what we have borrowed from Yesterday, and thus help along the movements that will enable Tomorrow to meet its obligations as Yesterday and Today have met theirs. Today is not an isolated instant; it is a pulsing and vital part of the great flood of Time that flows out of Yesterday into Today, and must flow out of Today into Tomorrow.

The man who fails to project his life into these three periods we speak of—Yes—

terday, Today and Tomorrow, misses the larger part of his inheritance, just as the man who lives only for self misses the sweetest part of life; for the thing that glows longest and brightest for us is the unselfish thing we do for others.

The error in the theory of our Detached Man is fundamental. It fails to take into account life's most sacred obligations. Surely we owe something for the conveniences, comforts and beauties that surround us; somebody toiled and suffered that we might have these things, and we, in our time, must make a fair return for them. We must pass it on to the men and women who are to come after us. Men and women who left us this inheritance of things, and forces, and institutions, gave more to the estate than they took from it, and if we fail to do likewise we will shirk a sacred and vital obligation and may put the plight of a curse on future generations.

This preliminary lesson, in which a little fancy has been mixed with facts, will lose much of its meaning for us if it fail to encourage a sober, earnest and honest consideration of the big and basic problem of Production, and our intimate and vital relation to it.

Man's Relation to Things

Man's Relation to Things—The Private Property Principle—Law of Things—What a Man Owes to the Tools and Other Conveniences Used in Industry and Business—Inefficiency is Waste of Man-Power.

Lesson No. 2

In our jurisprudence we recognize the Law of Things as well as the Law of Persons. Among other useful purposes, this Law of Things gives a definite legal status to property and defines the legal rights growing out of the ownership or possession of property.

In our economics also we recognize what we may call the Law of Things, though in its economic meaning this law is in some respects much broader than the Law of Things as we know it in the body of our civil jurisprudence.

The introductory lesson to these studies in Utilitarian Economics puts us in touch with some of the relations which exist between *persons* and things. These relations are so real, so necessary and so vital that they assume the dignity and importance of laws for economic purposes.

A man wholly detached from the things of modern society is unthinkable.

Each person in our social organization is a necessary part of the organization, and is involved in all the forces and agencies which make up the sum of our industrial activities.

We are familiar with the example where the *lack of a nail* meant the *lack of a shoe* on the horse's foot, and the *lack of a shoe* meant the *lack of a horse*, and the *lack of a horse* meant the *loss of a battle*.

It is so in industry. Each man must assume his place and fill the requirements of his position, else the output of the combined energies of all the other persons in the group will be less than it ought to be. It will show a loss, and this loss will fall, not exclusively upon the individual who is responsible for it, but upon the entire group to which he belongs, and often it will extend beyond this group to men employed in a chain of allied or dependent industries. Frequently one factory will depend quite as much upon another factory as one man will depend upon another man in industry. We can readily see what would happen to American industries if all our coal mines should suddenly close, or if our railroads should suddenly become involved in a complete tie-up. The processes of stagnation

would at once set in, business would halt, prices would begin to soar, wages would decline, millions of men and women would be thrown out of employment, and in a short while thousands of persons would be on the verge of starvation.

This brings us directly to a consideration of the worker's obligation to his job, and his intimate and consequential relations to the things and forces around him.

If a man labors with an ax or a saw, he should keep the tool sharp; otherwise the output of the day will be short.

Good workers love the tools they work with. The locomotive engineer keeps his engine in condition, cleans it, oils it, shines it, pets it and pampers it, believing all the while it is the best and fleetest engine on the road.

We have known linotype operators who would pound no more type of out of a Mergenthaler in a given time than an old printer could pick out of the cases with his hands. Yet the machine was set to produce four or five times as much type. This is merely another stance of a man chopping wood with a dull ax. The operator, in the one case, and the chopper, in the other, are either inefficient as workmen, or they do not care enough about their work and their

reputations as workmen to get close to the tools they use. *They are not mindful of their obligation to things.*

The wanton neglect or injury of a tool, whatever its character, is just as wasteful, from an economic standpoint and just as vicious, from a moral standpoint, as the destruction of a building, or other physical property, by criminal violence.

The same comment may be made on the wanton waste of good material, lumber, cloth or what not, in the processes of manufacture. Of course, a distinction must be made, in morals, between waste that is due to ignorance and inefficiency, and waste that is deliberate and purposeful; but in either case the result is the same from an economic standpoint. It is sheer waste, and waste always is a tax which must be borne by both the producing and consuming classes of society.

But the workers' waste is not the only waste that burdens our economic system.

We will take only passing note of the vast number of men and women who, in season and out, may be regarded as time wasters. These are the able-bodied idlers, the do-nothings of our social system, men and women who perform no useful work, and make no return to organized society

for the benefits and blessings it bestows upon them.

There are certain forms of waste, enormously hurtful and highly reprehensible, that are not violative of any of our common standards of conduct in business and industry. The money hoarder belongs to this class, for to permit money to remain idle is a waste of useful energy. Persons who permit land and other property to remain idle and unproductive are also wasters of this class, and these wasters deserve censure and condemnation just as much as the worker who fails to use his skill up to the maximum of his capacity, or who may attempt a day's work with an outfit, tool or machine that is out of repair.

These reflections will help the student to understand the *relation* between Man and Things in our economic system, between the capitalist and his capital, and, aside from any further consideration of the duty we owe *property*, which is made up of things, under our system of jurisprudence, should serve to emphasize the obligations and responsibilities we all assume when we use tools and other conveniences necessary in the processes of producing and distributing the wealth upon which we must depend for sustenance, health, comfort and happiness.

Responsibilities of Man

Responsibilities of Man—Divided Between Owners, Managers and Workers in Industry—Rights and Duties of Each Group—What Workers and Owners Should Receive Out of Production—Difficult Neutral Positions of Managers—How Men Are Placed in Industry.

Lesson No. 3

Responsibilities in industry fall, primarily, upon three groups of men: Owners of plants, Managers of plants, and Workers in these plants. The plants furnish the capital and promote and establish the enterprise; the managers plan and direct the details of operation, and the workers fit themselves into their proper places in the organization to perform the duties they are best fitted to perform.

Any consideration of the *responsibilities* resting upon these three groups of persons would be incomplete without fair reference to the *rights* of each group. We know that *rights*, whether political or economic, impose *responsibilities* upon persons who claim and presume to exercise them. It is equally true that the assumption or imposition of *responsibilities* presuppose the existence of

whatever *rights* may be necessary to enable the person or persons properly to meet these *responsibilities*.

Men and women who promote useful enterprises and put their savings into these enterprises are entitled to a fair return on their investments.

Managers who put their experience and talent into the successful operation of industrial enterprises are also investors and are entitled to fair treatment and just remuneration.

Workers who help to energize these plants and to keep them going are entitled to fair pay, safe, clean working conditions and reasonable hours of service.

Out of the earnings of the plant the owners must furnish sufficient capital to fairly pay the men, managers and workers, who keep the plant going; to keep the plant in fit condition for successful operation; and to take care of all other necessary obligations, such as taxes, insurance and other overhead charges. In a word, the responsibility of the owners is to supply the capital necessary to take care of the plant and keep it on the basis of a "going concern."

The responsibility of the managers is to plan and direct a way that will give the best possible results for the three groups of

persons directly interested in the successful operation of the plant. They must place, group and direct workers with due regard for aptitude, talent, serviceableness and efficiency. Fit men must be picked for foremen and other responsible positions.

Men must be placed in the plant where they can do best and most for the plant, best and most for themselves, for otherwise, the result will be unsatisfactory, and may be disastrous from the standpoint of a maximum output, which is, after all, the great consideration in practically all of our basic industries.

Properly the position of the manager of an industrial plant is neutral. He stands between the owners and the workers, and, in a very substantial utilitarian sense, is responsible to both. It is the manager's duty—at times a rather difficult duty—to protect and promote the interests of both the owners and the workers, for in no other way can he hope for a maximum of good in the management and general results of plant activities.

When we come to deal with the responsibilities of workers in an industrial establishment we encounter a more complex problem, for these responsibilities are largely *personal* and depend largely upon the

moral character of individuals. Owners look to the managers; managers look to the superintendents, foremen, or other heads of departments; but when we leave these heads we frequently have large groups of men to deal with, each man performing his work, more or less, in his own way. Practically the only test of the fitness and efficiency of many men and women in industry, and the only test of their faithfulness and loyalty, is to be found in the sum of what they do in a given working period.

If the worker is lazy, or indifferent, or vicious, and inclined to loaf, or practice sabotage in any one of its many forms, he will have ample opportunity to do it, for in the very nature of his work, he will be alone most of the time during the workday.

Thus, the question as to whether the average worker is to meet his responsibilities to the plant becomes altogether personal, in the first instance, and must depend upon his conception of his moral obligations. It is a refreshing reflection that a large majority of our American workers usually have met these moral obligations in a way that has been highly creditable to them and profoundly beneficial to American industry. Indeed very much of our marvelous industrial progress in America

is due to the fine moral character of American workmen, and it is a matter of supreme consolation to the owners and managers of our big industrial establishments that the average American worker is comparatively free from those hurtful inclinations and practices which have forced upon us some of our heaviest business losses and gravest economic problems.

At the same time a large infusion of alien elements into our industrial population has forced upon many of our largest industrial establishments the very serious problem of a lack of loyalty which grows out of the failure of workers to realize and fully meet their responsibilities in industry. The result is found in a lack of harmony between plant groups, frequent friction, costly ruptures, inefficiency, production much below the reasonable maximum, and a generally unsatisfactory condition with respect to wages, hours of service, and commodity prices.

Man's Duty to Man

Man's Duty to His Fellows—Fair Wages—Reasonable Hours of Service and Working Conditions—Goodfellowship As An Asset In Industry—Workers and Employers Should Be Considerate of Each Other's Interests—Old Idea of "Master and Servant" Outlined—The Hurt of Class Prejudices.

Lesson No. 4

Man's duty to man in industry is, for utilitarian purposes, not essentially different from man's duty to man in any other sphere of human activity.

We hear much of a system of "wage slavery" in America. Yet a careful study of American industrial establishments fails to reveal facts of sufficient moment to sustain the claim that "wage slavery," or industrial slavery of any other kind, exists in this country. True, industrial abuses are not unknown in this country. But in the main American employers, in whatever field of endeavor, are fair, and considerate of their workers; indeed, it would be an anomaly for them to be otherwise, for most of them have risen from the ranks of workers and have therefore a profound and abiding sympathy for persons who work for a living.

The fact that American workmen are the best paid workmen in the world, and that organized workers in America have made greater progress toward the solution of labor problems than the workers of any other country, emphasizes, in an eloquent way, the degree of success the employers have achieved in efforts to meet and perform the duties they owe to men and women who work for them.

What are the duties of employers to men and women who work for them?

It is a human obligation. Wages should be fairly remunerative; hours of service should be reasonable, working conditions should be such as to protect the health, life and limb of workers; and, quite as important as any of these things there should be at all times an attitude of genuine and substantial friendship, evidenced by efforts to be considerate, kindly and respectful in all relationships that exist between employer and worker.

Overbearing, inconsiderate employers do not get out of their men the best there is in them.

Nor will overbearing, inconsiderate workers get out of employers the best there is in them.

Industry can have no better asset than good-fellowship.

The human element in industry, as in politics and all other spheres of life, is the great need always, and the fact that we have more of this element in industry today than ever before in history promises much for the future of mankind.

When we ceased to speak of *master* and *servant*, and began to speak of *employer* and *employee*, it was an indication that we had passed into a new day for the world, and that the old order, with its castes, its class distinctions, and its galling inequalities, was passing away.

True, we still have classes, and perhaps always will have them unless nature finds some way of leveling all human beings into a common mass, with every person the equal of every other in skill, in intellectual endowment, in capacity to do, and to think, and to achieve, and with no person having any desire, or taste, or ambition above or beyond that of his neighbor; but so long as we have these differences in capacity and in inclination, we will find society divided into classes, and rightly so.

But that is no reason why we should have class prejudices, class struggles, class wars, for we have at least progressed far enough

to know that while these natural inequalities exist and may continue to exist, we can yet approximate equality by keeping opportunity open upon equal terms to all men of like talents and inclinations in a given group or class, and by scrupulously rendering "unto Caesar the things that are Caesar's."

How far we have traveled in the direction of a full realization of man's duty to man is indicated, not only by a large number of laws and administrative policies in the public service, but also by revolutionary changes in our industrial system, made as the result of better understanding between employers and employees.

Man's duty to man is not yet fully realized and performed; but humanizing influences now everywhere at work, in industry and elsewhere, serve hopefully to remind us that we are drawing ever closer, not only to a realization of this duty, but also to a performance of it.

Utilitarian Economics

This School is a Key to a Great Door; Knock and it will open to reveal many simple, practical, everyday economic truths that are now hidden, and make clear many things that are now in confusion

LESSONS

No. FIVE, SIX, SEVEN and EIGHT

Utilitarian Economics

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SEATTLE, WASHINGTON

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President and Faculty Director...*F. Wesley Phelps*
Director of Studies.....*J. Buckner Myrick*

Man's Inhumanity to Man

Man's Inhumanity to Man in Modern Economics—Ignorance of Economics to Blame—Failure to Understand Utilitarian Values—Some Popular Errors—Right to Work for Living is Both Natural and Constitutional Right in America—Mistakes of Labor Organizations—Injuries to the Public.

Lesson No. 5

In spite of all of our refinements, our progressive laws and policies, our benevolences and our general enlightenment, our economic system is still burdened by many things that are alike unbecoming and brutal.

Some men get too much, some too little out of the grind of the day.

Wealth and the benefits of wealth are not always justly distributed. Some men are richer, some poorer than they deserve to be.

But these inequalities are more or less ephemeral. Most men have come to understand that material wealth is of little value except in its use. The wealthy man does not get more benefit or more pleasure out of the clothes he wears or the food he consumes than the poor man gets, and, very often, not so much.

The mere fact that a man is worth several million dollars doesn't make him happier than his fellows who depend upon the pay envelope for what they get out of life.

Rich men are too far removed from their wealth to enjoy it.

Some workers get more excitement and more pleasure out of a single payday than some of our mighty captains will get out of a whole year's dividends from a dozen different sources.

The remote income, in itself, is unexciting and more or less empty from the standpoint of personal enjoyment, and contributes to the happiness of its beneficiary only when he humors his passion for planning new enterprises or enlarging old ones.

The satisfaction and pleasure of payday for the average worker is immediate and direct and contributes very much more toward a full life than the remote income of the wealthy man.

The injustice and inhumanity which have grown out of our failure to recognize such simple truths as these is appalling. All our bitter and often tragic industrial controversies and conflicts result from our failure to understand the true position of the man of wealth and the nature of his wealth. Rockefeller, Morgan, Armour,

Carnegie, all the great captains of the last quarter of a century, have been abused, ridiculed and held up to public scorn by thoughtless critics who seemed to think these men could wear more clothes, consume more food and live in more houses, all at one time, than the ordinary mortal, and that they, in some way, were wearing clothes, consuming food and living in houses that ought to belong to other people.

The fundamental error underlying all this injustice and inhumanity is in the failure to understand utilitarian values. Take the oil magnate; Rockefeller, by cheapening oil and developing facilities for its distribution, put light into more American homes than any other man of his time, not excepting Edison. Or take the great packer; Armour, and Armour methods, put meat and meat products within the reach of more families that had been without these things than any other single influence connected with the production and distribution of meats. We are not unmindful of certain abuses which inevitably crept into both the oil and the packing industry; but our concern for the moment is the *utilitarian value* of services rendered in one case by a man who put light in even the humblest of American homes, and in the

other by a man who put meat on the tables of even the lowest paid of our workers.

There is more of good than harm, more to praise than to condemn, in the policies and plans of our great captains of industry when we come carefully to weigh the *utilitarian value* of their colossal operations.

Rockefeller's kerosene lamp and Armour's meat have been powerful votaries in American industry, American culture and American civilization, and we should not permit prejudice and passion to blind us to the profound economic significance of these facts.

But all that is unjust and inhuman in the industrial life of America has not been lavished on men of great wealth.

The poorest of the very poor have not been without more than their share of injustice and inhumanity.

The right to work for a living is a *natural right*, and in America at least, has received constitutional sanction in the inalienable right to "life, liberty and the pursuit of happiness" and in the freedom of contract. Yet men have been denied this right by organized workers. In too many pathetic instances they have been abused,

clubbed, and sometimes killed when they sought to exercise it. In a long list of acts of violence committed either by members of labor organizations, or in the name of these organizations by sympathizers, nothing is to be found that is more shockingly inhuman than these repeated assaults upon citizens who, following the dictates of their own consciences and attending to their own problems in their own way, elect not to affiliate with labor organization. Nor has any single thing done more to discredit the great forward movement of labor than this intolerant and brutal attitude toward men who prefer an independent course of action in seeking employment. Moreover, because of these coercive tactics an extremely heavy per cent of the men who belong to labor unions owe their membership to fear rather than to devotion to the cause of Unionism, with the inevitable result that labor organizations generally are lacking in that solidarity of sentiment without which they can never hope to make the progress the workers are ambitious to make.

Nor have these organizations always been as thoughtful of the general public as they might have been. It is not easy to estimate the suffering and loss of life, for

instance, resulting from a strike of milk wagon drivers, or the men who deliver ice in a large city during the summer months. And who can contemplate, without shuddering, the frightful consequences of a prolonged coal strike, such as was threatened a little while ago, or a complete railroad tieup, such as we have had occasion to dread in the last few years?

In these cases, and in many others, "man's inhumanity to man" would indeed "make countless thousands weep," and the hideousness of it all cannot be lessened by the rather stoical reflection that such inhumanity is merely a reply to inhumanity almost equally as revolting, in some instances, on the part of employers.

All these things are utterly wicked, and what we are seeking to do is to point a better way which may easily be found if we will consider, as we should, the utilitarian aspect of everything having to do with our industrial relations.

Man's Duty to Self

Man's Economic Duty to Self—Love of Work Means Efficiency—How Man May Find Out Who and What He Is—"Know Thyself" in Industry—Conscience as a Guide to Conduct—Men Who Do Their Best Succeed Best.

Lesson No. 6

No man can do his best unless he first finds out what he is best fitted to do; and he will not do his best then unless he likes the thing he is doing.

Duties that are irksome are not well performed.

We do our best and finest work only when we love it.

Men of genius in industry, as elsewhere, are men who are passionately devoted to what they do in the day's routine, and without devotion of this kind no man can ever climb very far above the dull average.

"Know thyself," therefore, and do that thing you are best fitted to do.

It is not always easy for a man to know himself. Frequently the real self is concealed by prejudices and predispositions; or it is buried beneath a mass of personal vanities, or glossed over and hidden by the flatteries of our friends. It is of interest to know that all the witnesses we might

call in an effort to find out who and what we are, and what we are best qualified to do, are *prejudiced witnesses*, with perhaps one exception. Consciously or unconsciously, *my own opinion of me is prejudiced*. I am usually either more or less than I think I am. The *opinion of my friends*, as a rule, are rather too *flattering*. The *opinion of my enemies* are *unfair*, and often *unjust* to a hurtful extent. And persons not to be classed as either friends or enemies, while having no prejudices one way or the other, may be too indifferent, or too remote in what they know of us, to weigh accurately our talents and aptitudes.

But in spite of these difficulties, it still is possible for a man to find out, approximately, at least, who and what he is, and what particular thing he is best qualified to do. In any event the search for self is always interesting, always profitable, from a utilitarian standpoint, and the degree of success to be achieved in this search is a fair forerunner of the degree of success the usual man is to achieve in his life work.

Man's duty to self in industry included the obligation to know himself; he must also know his fellows, their rights, their responsibilities, and must respect them; he must know and observe the ethical

standards of the useful game he is playing; he must use his head as well as his hands; he must guard the interests of co-workers and employers just as he guards his own; must eschew envy, jealousy, bickering and bitterness of all kinds and hammering the line hard from his point of vantage.

The man who thus puts his conscience into his work usually is the man who climbs highest and achieves most.

Our industrial Titans are from the ranks of such as these.

No man can ever hope to rise above the dead, prosaic level of mediocrity who fails to live up to these obligations to self.

These rules of conduct apply with equal force to owners and managers. Owners and managers who permit favoritism, or the hope of some temporary financial advantage, to tempt them into errors in the selection and placing of men who are to operate their plants, or who adopt and enforce unfair policies and practices in dealing with their workers, are foredoomed to failure, and for the fundamental reason that they are assuming a wholly false attitude toward their own interests, which is but another way of saying that they are not true to self.

The rules here suggested in general

terms would necessarily include, not only all the relationships between owners, managers and workers, but would extend also to the tools used in the processes of production, machinery, plant equipment generally, materials and all physical properties connected with the plant and its operation.

Owners and managers will not fully meet their obligations to themselves if they fail to provide workers with tools and machinery that will enable them to work easily up to the maximum of their capacities. So, too, working conditions, shop environment, the general arrangement of the ports and departments of the plant, should all be such as to encourage a maximum of efficiency.

On the other hand workers will not fully meet their obligations to themselves if they fail to perform in a way that will encourage owners and managers in keeping the plant and its equipment and general arrangement up to a high standard of comfort, convenience, serviceableness and efficiency.

All these and many kindred obligations inhering in the routine of the day, are *duties men owe to themselves*, and men, whether owners, managers or workers, will succeed or fail according to the observance or non-observance of these simple rules.

The Minimum Man

Economic Status of Minimum Man Who Does His Least and Worst—All Inefficiency Not Intentional—Some Men Below Normal—Utilitarian Value of Minimum Man Difficult to State—Evil Consequences of High Wages and Low Output.

Lesson No. 7

The Minimum Man in industry is the man who does his *least* and *worst* instead of his *most* and his *best*.

Not all the *minimum men* in industry are inefficient from choice. Many of them are naturally below normal in talent. Their minds are underdeveloped in many instances. They think slowly, muddily, or not at all. They use their hands and their senses clumsily, often to their own serious bodily hurt. Some of them might have become more efficient if they had fallen into the right grooves, or if they had been given earlier training in the work they have elected to do.

But whether intentional or unintentional, the *inefficiency of Minimum Men* is one of the heaviest taxes resting upon the modern industrial system.

There are other men in our industrial

plants who purposefully and deliberately keep their efforts and capacities on a minimum basis. They want short hours and long pay. Their chief concern is, not the output of the plant, but the pay envelope. Frequently these men are much above the average in both general and special intelligence. Given different dispositions, and assuming a different and juster attitude toward themselves and their employers, many of these men, instead of remaining on low minimum levels in industry, could achieve marked success, and would become a benefit instead of a burden to the American industrial system.

Considered from the standpoint of Utilitarian Economics, the *Minimum Men* in industry present one of the hardest and most vexing of our economic problems. The *Minimum Man* covers a wide range of persons in industry, extending from the untrained or mentally deficient worker who is helplessly and hopelessly, but unintentionally inefficient, all the way to the shrewd and capable radical propagandist whose deliberate attacks upon efficiency in industry frequently assume the revolting aspect of criminal violence. These are slackers, saboters; men who throw monkey-wrenches into costly machinery; cut shovels off to

make the lift lighter and resort to other practices to reduce the value of services they accept pay to perform.

These men present a complex problem, one having quite as much to do with morals and politics as it has to do with economics. We shall not stop here to consider the evil consequences of this perverse attitude of the worker toward his obvious moral and legal obligations. We shall consider it only from the view point of Utilitarian economics and in its relation to some of the larger problems that now vex and burden the labor movement and the employers of the country.

Who makes up the deficiencies of the Minimum Man in industry?

Men who deliberately attack production, or the agencies and instrumentalities of production, with a view of reducing the output, attack at the same time, not only the wage scale, but the general level of commodity prices also; for as production is hammered down, wages also are hammered down, and commodity prices are hammered up.

Thus these men inflict a double injury upon the workers. By curtailing production they force employers to curtail wages or reduce the market supply of the things

they are engaged in producing, thus creating a wholly arbitrary and artificial scarcity of these things in the market, and this, inevitably, results in an upward trend of prices.

Production is the basis of all our economic relations.

No factory, in normal times, can pay high wages on a low output without hazarding the dangers of bankruptcy.

Nine-tenths of the deficiencies in wage scales are chargeable to the *Minimum Men* in industry; and nearly all of the quarreling between employers and workers in this country may be traced finally to the same wicked source.

The whole question of plant efficiency in America resolves itself finally into the problem of the Minimum Man, and if employers and workers will, in good faith and with feelings of goodfellowship, address themselves studiously and seriously to this problem with a view of solving it in a way satisfactory to all persons and interests involved in it, they will soon rid American industry of many things that now burden it.

The Maximum Man

The Maximum Man—Struggle Between Maximums and Minimums—Job Must Fit Work—Misfits and Misplacements in Industry—Maximum Service and Maximum Wage—Definition of Maximum Man—The Menace of the "Half Man" in Industry—The Great Goal in Industry.

Lesson No. 8

In industry, as in other spheres of activity, there is a steady, persistent struggle between Maximums and Minimums,—between men and groups of men who do their *best* and their *most*, and men and groups of men who do their *worst* and their *least*. Go where we may or will, into whatever plant or business institution, and, if we are at all observant and critical, we will see evidences of this ceaseless conflict between Maximums and Minimums.

What the normal man craves most is a chance fully to express himself in what he does or says.

The Maximum Man digs out of his own nature a *Maximum* of his own worth, and puts it into his work. The logical economic consequence is a *maximum wage*, steady advance toward higher personal levels, and,

ultimately, a maximum of success, and a maximum of happiness.

By an intelligent application of their skill, men sometimes achieve *Maximum results* at a *Minimum* outlay of energy. These are thoughtful workers. On the other hand, we frequently meet men who will expend a *Maximum* of energy to achieve *Minimum results*. Such men usually lack the skill and intelligence necessary to make them efficient. Not always are they lacking in either faithfulness or industry. More often it is a case of *misplacement*. They are undertaking to do, not the thing they are *best* fitted to do, but, perhaps, the thing they are *least* fitted to do.

The *job must fit the man* always if the man is to rise to the full maximum of his powers, his skill and his usefulness in the economy of life.

The *misfit* in industry often is as much of a burden as the *unfit*. But a man who does not fit into one position may fit into another, and thus finally find the work he is best qualified to do. This problem of placing men according to their talents and aptitudes is alike vital and perplexing, and is the direct cause of much friction and much ill-feeling in industry. The blame, as a rule, cannot all be put upon either the

management or the worker. In most cases both are at fault; the worker, in the first place, because he has not the knowledge he ought to have of himself, his own skill, aptitudes and inclinations, and the management, in the second place, for a lack of that quick insight and intimate discernment so necessary to the proper placing and grouping of workmen according to their fitness.

Most men of normal type wish to rise to the level of their *maximum capacity*. Even the hopelessly inefficient man frequently struggles to attain high standards of efficiency that will cause him to be regarded by his fellows as a *Maximum Man* in his class.

The *Maximum Man* is the man who does his best, in the best possible way, in the shortest possible time, and at the least possible expense to himself and his employer.

Not always, but usually the *Maximum Man* gets the *Maximum wage*.

Of course all men are not endowed by nature with the intelligence and skill necessary to achieve maximum results in industry.

We find in industry the same personal disparities and differences that we find in law, in medicine, or in any other sphere of human endeavor. Men in America are

born equal only in the sense that our public policies extend to them equal rights and equal opportunities, insofar as the law can bestow these things. It is not possible for the law, or any other conceivable thing, to put all men upon the basis of *absolute equality*. The differences between men, differences in talent, taste, look, and outlook, are written by nature, and man cannot rub them out; and it is a good thing that it is so, for without these differences life would lose much of its charm.

In a recent issue of a scientific publication there appeared an article on "the menace of the half-man," the subject being approached from a moral standpoint.

In one American city seventy schools are maintained to accommodate pupils that are strikingly deficient in mind and in moral outlook.

The "half-man" is a menace and a problem in economics, as well as in morals; indeed, we sometimes think if we could work out some plan, or some policy, that would fill American industries and other American business establishments with *whole men*, men of *maximum intelligence* and *maximum efficiency* in the group to which they belong, most of the problems that now

vex us, moral, political and economic, will melt with thin air.

The things and relationships we have been considering in our studies thus far will enable us to understand, not only the *impossibility* also of the shallow notion that any human being in organized human society anywhere can now morally lay claim to the full and undivided value of all he produces with his labor, whether he does it with his hands or his brain.

It is just as impossible, as indefensible and as immoral for a man in industry to claim the full value of all he produces as it would have been for Mozart or Wagner to have claimed the full value of the marvelous music they wrote, or for Edison to claim the full value of all of his remarkable inventions. Edison, like our great composers, and like our great captains in business, is sharing the fruits of his talent and his labor with mankind, and when we squeeze our problems in economics down to final terms, we will find that all men must do likewise.

What we have said in the series of studies about man and his relation to persons and things, his responsibilities and his duties, whether worker or employer, whether he labors with his muscles or his mind, and

whether we have considered the *minimum man* or the *maximum man*, has been said with the hope of stressing our intimate personal and collective involvements, and the vital and mutual obligations which spring naturally from these involvements. We are here among our neighbors. Some of us are strong, some are weak; some are capable, some incapable; some helpful, some helpless; and whatever the blessing and the burden of it all, the obligations imposed are mutual obligations and we cannot shirk them without doing violence to self, to society, and to the best teachings of our civilization.

No man is independent. No man who is mentally and morally sound wishes to be independent.

Progress in human society is toward dependence.

By *dependence* we do not mean helplessness, laziness, indifference, or a lack of pride in personal prowess and personal superiority and achievement. We mean simply a recognition of intimate interlacings, the mutuality of our interests, and that fine accord which enables each of us to carry our part of the common load of the world's work.

Not all of us can attain the high levels

of the mighty men of genius; but when we have given full and adequate play to our talents, doing our best each day, and in every set of circumstances; accepting the challenges of each day with resolute and cheerful courage, and putting heart and conscience into the thing we do, we will at least attain *maximum levels* in our spheres of activity, and may step into the class of the Maximum Man we have been considering.

LESSONS
No. NINE, TEN, ELEVEN,
TWELVE, THIRTEEN and
FOURTEEN

Introduction to the Study of the Senses and Their Utilitarian Value

The discussion of the economic function and importance of the animal senses, Sight, Hearing, the Sense of Smell, Taste, and the Sense of Touch, is, we believe, unique; yet such a discussion obviously is a fit introduction to a study of Tools, the second grand division of our studies in Utilitarian Economics.

In considering the vast and varied uses to which we put our senses in modern industrial life, and, indeed, in all useful spheres of human activity, it is interesting to note that man is the only animal, so far as we are permitted to know, that has been able, with the aid of mechanical devices, to greatly extend the range of his natural senses. This fact alone, without any consideration of the uses to which we put the unaided senses, is sufficient to make the animal senses of profound economic importance; and it really is amazing that economists have not hitherto given these tremendous factors in our economic development a large place in their studies.

No study of economics, it seems to us, is

complete unless it gives a big and important place in the history of our economic unfoldment to the normal animal senses without which the progress we have made would have been impossible.

These senses, finally, form the broad and enduring base upon which we have rested all that we have, all that we know, and all that we have achieved in our toiling up through the sweat and muck of the centuries.

A brief suggestive study of these senses, as a kind of prelude to a study of Tools, the mechanical aids they have called to the assistance of mankind, may, therefore, help us to a better understanding of the utilitarian philosophy we are seeking to emphasize in this series of lessons.

Utilitarian values, a phrase frequently found in these studies, should be understood by students who wish fully to grasp the meaning of what we are trying to teach in economics.

Utilitarian values are not merely *useful values*; they are also *useful values* in *rightful use*.

A fine mind, unusual skill as a mechanic, genius in art or statecraft, nobility of character, exceptionally keen senses, great physical prowess,—these and many other hu-

man attributes represent *possible utilitarian values*. A fine mind *unused* or *put to base uses*; unusual skill as a mechanic *misused, abused* or *neglected*; genius in art or statecraft *perverted* to *attain ignoble aims*; nobility of character failing to express itself in worthy deeds; exceptionally keen senses *impaired* by *sluggishness of habit, dissipation, disuse* or *misuse*; great physical prowess *wasted* in *idleness* or otherwise *abused*,—obviously in all these cases we fail utterly to find anything to express our conception of *utilitarian values*.

We realize *utilitarian values* only when we translate these splendid human attributes into *useful action*.

Everything, every talent, every marked aptitude, every force latent in human character has a *possible utilitarian value*; but unless these are put to *good uses*, unless they are translated into *useful action*, action that will bestow some benefit upon persons within their sphere of operation, we cannot regard them as *realized utilitarian values*.

It is not enough merely to *use* a talent, a tool, or a power. We must use it *rightly*, and for *right purposes*, and thus achieve results that are *approximately right*, mor-

ally and otherwise, before we attain *utilitarian standards*.

Bentham was slightly wrong in assuming that the *useful* is also the *beautiful*.

The *useful* is the *beautiful only* when the useful expresses itself in worthy, helpful action.

Broadly things have two uses: A Right Use, and a Wrong Use. Take a knife, for instance: In the hands of a skilled surgeon it may be used to save a highly useful and noble life and thus add greatly to the general well-being and happiness of mankind. We here realize the *utilitarian value* not only of the knife, but of the surgeon's skill also. But suppose we put the same knife into the hands of an assassin and he uses it for murderous purposes. Here we find the *Wrong Use* of a highly useful tool, and what we reap surely is not *utilitarian value*. It is a *destructive value*, the direct antithesis of *utilitarian value*.

The same is true of all mechanical tools.

It is true of the animal senses also; true of the uses or misuses to which we put our Eyes, our Ears, our Nose, and the other senses with which we are blessed, and it is equally true of all other human attributes.

The *utilitarian value* of the human hand is not in the hand merely, but in the good

service the hand renders; and therein lies the beauty of the hand also, for if we use the hand for unworthy purposes, such as stealing, for instance, surely there is no beauty in it and therefore no *utilitarian value*.

Great ideas, great thoughts, great sentiments have *utilitarian values* only when they loosen useful energies and thus afford us an opportunity to call our animal senses to the line of action in the routine of the world's work.

Natural Weapons

Use of Tools in Economics—Natural Weapons as Distinguished from Artificial or Mechanical Devices—Origin of Some Things We Use—Hands and Legs—Legal Recognition of Old Utilitarian Values—Workers and Employers Guard Industrial Insurance—The Extension of Man's Senses by Artificial Aids.

Lesson No. 9

Tools are the weapons with which man attacks the raw materials or the raw forces of nature.

It is interesting, and it may be helpful to note that our English word *weapon* is allied to the Anglo-Saxon word *wæpman*, meaning a full grown man; and that it also may justly claim kinship with the Scandinavian word *wapentake*, meaning a district, or a political division. In the Icelandic language we find the word *Vapnatake*, which means a weapon-touching,—an old way of taking a vote, for districts were governed by men whose authority to govern was confirmed by a touching of weapons.

Our word *tools* comes more directly from *work*, and is related to a number of words descriptive of early industrial activities.

But we are now concerned with *natural weapons*, the things with which nature provided us before we had entered upon the business of making the vast number of things we now call to our aid in industry and in other walks of life. Of course we still use these natural weapons,—legs, hands, eyes, ears, nose, taste, feeling,—but all of them we have supplemented and amplified by all kinds of mechanical and other artificial aids that enable us to do more in a given time than we could do in the natural state.

We could not travel far in these times if we were forced to rely solely upon our legs for transportation; yet our legs carried us through many centuries of time before we had arrived even at the age of crude boats.

In primordial times we made a cup of our hand and drank water out of it; it was also the plate from which we ate our uncooked food, and served us, too, as knife and fork. The hand also answered many other purposes in that dim and distant time before we had progressed far enough in the arts of peace to surround ourselves with the conveniences that are now within the reach of even the humblest of our kind.

What an enormous family of things,—cups, saucers, plates, bowls, jars, pots,

pans, spoons, knives, forks, all kinds of convenient containers, and many of the pointed and sharp edged tools,—we can trace back to the human hand! But how odd, how inconvenient it would be now if we were compelled to put our hands to all these primitive uses! True, we must still depend upon the hand, in part, at least, even for the things we have substituted for the hand in the daily routine of life. The hand must still play its part in the smallest as well as the greatest of our undertakings. This fact is recognized in our jurisprudence now in a very definite and very substantial way, for under industrial insurance laws now on our law books, the man in a hazardous calling in industry who loses a major hand can collect from the state as much as \$1,500.00 for the loss he had sustained. So, too, the law puts a definite value on the eyes, ears, arms, legs, according to the usefulness of these natural weapons in industry, and if they are lost, or only injured, the person suffering the damage is compensated according to a rule prescribed by law.

This legal recognition of the value of man's natural weapons, while comparatively recent, marks a far forward step in utilitarian economics, for utilitarianism is the fundamental basis upon which we have

rested these progressive and humane measures. Employers and employees alike pay ungrudgingly into the state's industrial insurance fund, for they have been quick to see the enormous and growing advantage of the policy. Accidents have decreased under this method of compensating injured workmen, and for obvious reasons. Both employer and worker are anxious to protect the fund they are taxed to maintain; employers are more careful about the conditions under which men are required to perform hazardous duties, using, whenever possible, the best approved safety appliances; and the workers, as a rule, perform their duties more thoughtfully and with less of that reckless unconcern which once characterized workers of this type. The general benefit is found in the fact that our court calendars are no longer cluttered with suits for damages growing out of industrial accidents, and the shyster lawyer and "ambulance chaser," who once plundered worker and employer with equal conscienceless in these cases, has been forced to find other fields for his talents.

We find, too, in pursuing these studies in utilitarian economics, that American employers, as a class, have introduced many innovations in industry with a view of pro-

tecting their workers against any impairment of their faculties and a consequent lowering of their capabilities. Health is as scrupulously guarded as life and limb; the air must be right for the lungs, the volume of light right for the eyes; the hearing must be protected against possible impairment by harsh, continuous noises, as in telephone exchanges, and thus, all the senses which lie at the basis of man's original equipment for grappling with his industrial needs, are now considered as prime individual and collective assets and are shielded against influences that tend to undermine them with a solicitude that is at once helpful and inspiring.

In subsequent lessons dealing with *natural weapons* we shall see how helpless we would be in industry, no less than in the arts and sciences, and how much of convenience, of comfort, of pleasure and of beauty we would have missed, if our farseeing forbears had not opened the way for an extension and an amplification of the uses to which we put these *natural weapons*. It is an interesting reflection, and one which stirs our human pride, that, among all the things in the scale of animal life, man is the only animal that has been able, by wholly artificial means, to extend the range

of his senses. These extensions in the matter of vision, of hearing, and of feeling, constitute amazing developments in human history, and, from a utilitarian point of view, it would be difficult to find any other developments that have been more profoundly beneficial to the human family. Indeed, if we should sponge the slate of all other obligations when we came to consider what return we should make for the blessings we have inherited from the toilers of Yesterday, we would still find that we owe much more than we can ever hope to pay to the men who have extended the range of our vision, of our hearing, and of our sense of feeling until we can search and understand regions of space so remote from us that we can scarcely compute the distances.

The Eye

Economic Value of the Human Eye—Legally Recognized in Industrial Insurance Acts—Uses to Which We Put the Eye—The Naked Eye and Its Aids—Glasses that Help Us to See the Biggest and Smallest of Things—Benefits Derived From Yesterday.

Lesson No. 10

The economic value of the human eye is so vast and so varied, the uses to which we put the eye in our daily routine are so numerous, and, in many instances, so indispensable, it is not an easy matter either to define its position or to describe its function. Indeed the contributions of the human eye to civilization, even when we consider them from a cold economic point of view, are obviously so great in number and importance that we cannot do more than suggest them by naming only a few of them.

We pass over the uses to which we put the eye in academic education; in the mastery of languages, in learning the use and meaning of words; in reading pleasurable and profitable books; in the perusal of our daily papers and our favorite magazines; in the contemplation of classics on canvas,

in stone and in the five lines of buildings that stand out as imposing specimens of architecture in various parts of the world; yet these things, too, are a necessary part of our economic studies, for they have been factors of profound moment in economic evolution, and have made many notable and necessary contributions to our vast stock of utilitarian values. As a fact without these things we would still be in the shadow that glooms the jungle and the cave, but little removed from the ideals and practices of higher forms of apes.

The economic value of the eye is now legally defined in all of our industrial insurance laws, though this value is too low to give any fair idea of the important part the eye plays in modern industrial life. But the value the law puts upon the human eye in the event of its loss in hazardous work is necessarily arbitrary and is governed to some extent by the rule of averages applicable to a given industrial group. Besides it necessarily takes into consideration *only the value in use of the naked, unaided eye*. The test in fixing the value of an eye is not in what it may be worth to the person who loses it, but what it is worth to society as a whole; and in applying this test it manifestly would be absurd to add

the value of those useful and indispensable aids science and invention have provided to enable us to meet the demands of modern industrial life.

This consideration again brings us face to face with the big debt we owe for what other men and women, in other days, have provided for our use and benefit. Without glasses to aid us in the processes of visualization, and to extend the range and amplify the accuracy of vision, many millions of human beings would be unable to follow their favorite pursuits and do the work they are best fitted to do.

With the naked eye at its best we cannot see very far. But when we call to the eye the aids now within reach of all classes of persons, there is, for practical purposes, no limit to our visioned range. We have projected our vision into the blind recesses of space to uncover worlds so remote from our own that we can scarcely think of the distance. The telescope has enabled us to measure distances and sizes so great we can scarcely compute them. The Xray enables us to see through solid substances. With the microscope we can see things so utterly small that we regard them as no longer divisible.

It would be dogmatic to say we would

have made no progress without these aids to the human eye; yet without the telescope we would have been without much information of high economic value; without the microscope, the science of chemistry, which has played such a big part in our industrial and general development, would still be in its infancy; and we would know much less, too, of the nature, origin and general characteristics of the diseases that afflict humanity.

The ordinary economic uses to which we put the unaided eye in the routine of the day are too familiar to need emphasis; the locomotive engineer looking steadily at the track before him as it rolls under his engine; the lighthouse watchman scanning the sea for ships and storms; the lookout searching for whales from the crow's nest; —in a few words, millions of human eyes everywhere gazing upon things and forces, men and machines, toiling and whirling usefully in the mesh of our varied and beautiful economic fabric!

The Nose

Practical Use and Value of the Sense of Smell—Neglect of the Nose—Common View of Its Functions—Even Economists Ignore It—Some of the Economic Uses of the Sense of Smell—Telling Quality of Cloth or Foodstuffs by the Odor.

Lesson No. 11

We come now to consider a sense of high economic and scientific value, but one strangely neglected in spite of its constant use. Economists have not considered the nose a factor in our economic development. Even our medical scientists have neglected the unsurpassed utilitarian value of this animal sense. Indeed the common view of the sense of smell among practically all classes of persons is that it is limited to two functions: One has to do with things and conditions that are unpleasant and unwholesome, and the other with things and conditions that are pleasant and wholesome. Certainly this sense would be highly useful if it answered no other purpose in animal economy, for it would mean something constantly to warn us against the dangers to health that where in unwholesome physical conditions, decaying animal and vegetable

life, stale and stagnant air, poisonous gases, miasmatic exudations, and many other things of like character. So, too, the pleasureableness of sweet and spicy odors would answer a useful purpose in life. But the sense of smell has still other practical uses in the economy of human society.

The fabric expert rubs a piece of cloth between his hands and holds it to his nose. Cloth is made out of vegetable fibre, such as cotton or flax, or out of animal hair, such as the wool of sheep, or out of a mixture of these. Our fabric expert uses his sense of smell to find out, not only whether the odor of the sheep is in the cloth, but also approximately how much of it is wool and how much of it is cotton. By rubbing it violently between his hands he develops certain latent qualities inhering in the texture of the material that enable him to find out what he wishes to know. The degree of his success depends upon the keenness of his sense of smell and the accuracy with which it can mark the difference between the odor of threads made of cotton and threads made of sheep's wool. Odors are as distinct as colors or forms, and we could as readily recognize and classify them

if we had not neglected one of the most useful of animal senses.

Druggists know chemicals and medicines by their odors.

Diseases have distinct odors; and some diseases are readily identified by the sense of smell.

Flour experts know the difference between good flour and bad flour by the odor of it. Most any of us can tell good from bad meat, good from rancid butter, or old from fresh fish. The wine and liquor experts of France and America, indeed the "wine tasters" of all countries, have depended quite as much on the sense of smell as on the sense of taste in determining the age and quality of intoxicants. The same may be said of tobacco experts, sugar and syrup experts, coffee and tea experts, and a long line of experts in our commercial and industrial life who deal with products that result from blending processes, that is, products made from different grades or qualities of the same article, or from a mixture of different articles, such as cloth made of wool and cotton, or of cotton and silk.

Despite its shortcomings, due to impairments for which we are responsible, the nose is still of vast economic usefulness to us, though not many of us ever stop to think of it.

The Ear

Part the Ear Plays in Economic Life—Long Distance Listening—How the Telegraph, Telephone and Wireless Have Extended Range of Hearing Around the World—The Ear in Business—Law Recognized Its Value.

Lesson No. 12

In the two preceding studies we found that we had vastly extended the range and utilitarian value of the human eye, but that we had perhaps, through neglect, failed to realize fully the economic usefulness of the nose.

In considering the human ear, and its place and value in modern economics, we will find another remarkable collection of artificial aids that we have called into play to extend the range and value of this useful sense. If we have amplified and extended the range of human vision until we can see stars in space so remote from us that we can scarcely calculate the distance, we have also extended the range of our hearing until we can hear around the world. The telegraph, the telephone, the cable and the wireless have wiped out distances in all enlightened parts of the world. Any part of the civilized world can now

make itself heard in any other civilized part, and in such a short period of time, too, that we have almost eliminated time, just as we have eliminated distance, in our world relationships.

But we have a deeper concern in the closer and more practical everyday uses to which we put the sense of hearing. Our ears, like our eyes and our sense of smell, are in such constant use that we are at times quite unmindful of their great utilitarian value. We are constantly receiving useful business and professional information of the most intimate and vital concern to us; or we are listening to new and alluring business proposals; or receiving important instructions in regard to the day's business or tomorrow's plans, or taking orders for something we have to sell, or absorbing some bit of useful knowledge passed on to us by a friend.

So, too, our ears enable us to distinguish the ring of one metal from the ring of another, one voice from another voice, or good music from bad, a fact of very great importance since the advent of mechanical music, such as we have in the playerpiano and the phonograph, for here a good ear is of prime importance in passing upon the

tone, registry and general merit of records.

In some of our mechanics the sense of hearing is so highly developed that the least jar in the sound of the machinery under their control will be detected and they are thus frequently able to prevent accidents of a very serious nature. Others who, perforce or otherwise, have permitted the sense to suffer impairment, are often less fortunate and close their records with a frightful disaster.

The sense of hearing is also valued in our industrial insurance laws, and compensation is provided in case of its loss or partial impairment in hazardous occupations. This compensation, as in the case of the eye, is reckoned on the basis of the loss, not to the individual, but to society as a whole.

The Sense of Taste

Sense of Taste as a Factor in Modern Life—Creates Demand—Helps to Regulate Production and Fix Price Levels—Overlooked By Older Economists—Taste as Criterion in Market-place—How Expert Buyers Use Sense of Taste.

Lesson No. 13

If we may mix a little poetry in with our philosophy as we go along in this study of utilitarian economics, and thus make plainer some of the things we are seeking to impress upon the student's mind, it may help us to a fuller and completer understanding of *natural weapons*; the *natural tools* with which we have been blessed and upon which we must so largely depend, not only for subsistence, but for our pleasures and luxuries also. Thus we depend upon the eye to mark out for us the delicate graduations of color, the tint and radiance of a beautiful natural environment; we depend upon the nose for the honied perfumeries that sweep up from the meadow and the flower garden; we depend upon the ear for the silvery cadences of our wooded areas and the fine tonal blendings our musicians have fashioned for us, and upon taste, in an equally poetic and practical sense, for the

exquisite flavor of things—the flavor of foods and fruits, of drinks and confections and a long list of things that minister to our comfort and wellbeing.

Here again the older school of economists have failed to take into the reckoning a prime factor in our economic life.

Normally demand for a given article does two things; (1) It is a factor in fixing the price at which the article sells in the market; (2) It is a factor in speeding up the energies involved in the production of the article.

Demand depends largely upon taste. Taste thus becomes a factor in determining price levels and in production also.

If the taste of the large number of consumers is for mutton rather than pork, the *normal tendency* will be toward higher mutton production. The use of the phrase *normal tendency* is deliberate; for if the production of mutton is too rapid, and out of proportion to the normal demand, the market may become overstocked and prices may decline. Or if prices are increased too rapidly, the demand may slacken, and again the trend of prices would be downward, though production may remain approximately normal. In these abnormal situations, the law of taste is not working

freely. Artificial barriers are intervening to prevent it from playing its normal part as a factor in determining prices and in influencing production.

But taste has other vital economic uses. Foods, fruits, confections and other edibles are rated as good or bad, generally speaking, according to the appeal they make to the sense of taste. When we say we like the flavor of a certain brand of ham or bacon, or coffee or tea, or any other product, all we mean is that it pleases our taste. Taste thus becomes a criterion in the market-place. The merchant who can find out what articles are most favored by the public taste, and who seeks to supply this demand at the most reasonable prices, is in a fair way to make a success of his business.

Many men in the business world, particularly buyers of foods, drinks, and other things of common consumption, have developed the sense of taste up to a maximum of usefulness. They taste before they buy, taste the cheese or butter, the tea or coffee, the sugar or syrup, and by this process determine the quality and grade of the product. Sometimes the eye and the sense of smell can help in these grading processes; but in very many instances the sense of

taste is the sole reliance, and hence taste becomes an attribute of the first importance in modern business life and an economic factor of supreme rank when we consider utilitarian values and utilitarian standards.

The Sense of Touch

Functions of the Sense of Touch—How it is Used in Trade—Example of Cotton Classers and Other Textile Experts—Grading Finely Ground Grains by Touch—Devices to Register Temperature and Measure Wind Velocity Suggested by Sense of Touch.

Lesson No. 14

Whether we know anything about it or not, we always feel of a piece of cloth when we go to buy it. Our fingers may not tell us anything that is reliable or conclusive about the texture and quality of the goods; but there are many men and women in the world who can appeal to this same sense with absolute confidence.

Not only do they know wool, cotton, silk or linen in their pure, unmixed state, but they can tell by feeling of cloth that is a mixture of these, not only how much wool or cotton or silk or flax they contain, but also in what manner the threads have been put together. In a word the sense of touch instantly will tell them all they wish to know about the grade and quality of the cloth.

The sense of touch is so highly developed among cotton classers in the Southern

states that some of them could almost grade and classify a bale of cotton in the dark.

Many articles of food also are graded by the sense of touch. Some graders of flour, for instance, or meal, or sugar and other finely ground materials, rely quite as much, if not more, upon the sense of touch than upon either the sense of sight, the sense of smell or the sense of taste, though, as a usual thing, all these senses are brought into play by our expert graders.

Many blind persons can tell the more pronounced colors through the sense of touch. The high state of development of this sense in persons who are blind is a matter of common note. Moreover, Helen Keller, and Senator Gore, the blind statesman from Oklahoma, have made us familiar with the remarkable success and distinction persons may achieve when their main and sometimes sole reliance, so far as the human senses are concerned, is the sense of touch, and its close ally, the sense of taste.

Here, too, we find another of the very useful senses that human beings, as a rule, have neglected. While the sense of touch still has many valuable economic users it yet is not as useful as it should be in our common everyday affairs.

Allied to the human sense of touch, and

no doubt suggested by it, are a large number of things of great economic value. The thermometer and other devices we use to register temperatures, the direction and velocity of the wind, barometric pressure and other atmospheric conditions, all of them of high value in modern economic life, are among these now indispensable devices.

The list of mechanical contrivances of a highly sensitive character, all of them bearing some relation to the human sense of touch, is a very long one.

Only recently the scientific world was interested by the announcement of experiments with a new device that would register the human emotions, and while there may now be some question as to the practical and utilitarian value of such a device, the mere possibility of an instrument so sensitive as to record the rise and fall of the various human emotions is of profound scientific interest.

These studies of the five senses have indicated, in some measure, the nature and importance of the series of lessons to follow, for in these lessons we will consider the mechanical aids our senses have helped us to create in order to amplify and increase other natural agencies of great and indispensable use to us in our economic life.

What we have been able to do as the result of an extension and amplification of some of our animal senses, notably vision and hearing, cannot be completely understood until we have given some consideration to the mechanical aids these senses have enabled us to call to our assistance in industry, in commerce, in science and in all the useful spheres of modern activity.

We shall not say or assume that if we had been blind and deaf none of the many wonderful mechanical devices now in constant use would have remained unknown; but we can say with confidence that sight and hearing have been of enormous help to us in developing the wonderful things we now use in the routine of the world's business.

What has happened as the result of mechanical creations made possible by the use and extension of the animal senses is one of the most interesting things in economic history.

We have many times multiplied all of our powers.

We have made it possible for one man to do the work of many men.

Take printers as an example: One printer operating a linotype will set as much type in a given time as five printers of the old school could pick out of the cases. It is not because he is a better or a more efficient printer. The difference in favor of the printer of today who operates a linotype is due to the machine, or the tool, if you please, with which he works. But it is error to assume that the printer of today should receive five times as much pay because he turns out five times as much type as the old printer turned out, thus doing work it once required five men to do. In the first place he does no more actual work than the printer who picked the type out of the cases. Besides the machine which enables the linotype operator to do the work it once required five men to do was produced by the labor of other men; these men have made it possible for the printer to set as much type as five men in the old way, and they have absorbed, in wages, approximately what the

four missing and now unnecessary printers would have absorbed if we still used the slow process of picking type out of the cases.

Or take another example: Many of us remember the lamplighter in towns and cities who, just before sunset, used to go around with ladder and torch, or matches, to light the oil lamps of the community. The larger the community the more lamplighters it required to light the city for the night.

Now one man, or only a few men at most, can pull a switch and light, in an instant, the largest of our American cities.

Where it once required many men and much time to light our cities, one man or only a few men can do the work in less time than it takes to tell about it.

This multiplication of our man-power, while considered in a general way by economists, and recognized by everybody, nevertheless presents a neglected subject in economics. So far as we have been able to find there is no statistical data available to show to what extent man-power has been multiplied in our various industries.

Here is an interesting field for some students with a bent for statistical research; for if we knew to what extent our man-power has been multiplied by the invention, construction and use of mechanical contrivances of various kinds, we would be in possession of a scientific fact of profound importance from the standpoint of utilitarian economics.

These brief studies of the senses will help us to understand, to some extent, at least, the enormous increase in manpower in modern times as the result of mechanical aids to be discussed in the lessons to immediately follow, and will help us at the same time to clear up some of the confusion which may have burdened our own thinking and talking on economics.

LESSONS
No. FIFTEEN, SIXTEEN,
SEVENTEEN, EIGHTEEN,
NINETEEN, TWENTY
and TWENTY-ONE

The Tools of Labor

Impossibility of Supplying Human Wants Without Tools—Definition of Tools—Type and Variety Show Human Progress—Machines Have Vastly Multiplied Man Power—Some Illustrations—The Age of the Machine.

Lesson No. 15

Without the tools with which modern workers of all kinds have been provided we could not today do the world's work. It would be physically impossible to supply the normal wants of each day. If all the tools we now use in the routine of each day should suddenly be taken from us an overwhelming majority of human beings in all civilized countries would, in a brief space of time, be face to face with industrial and commercial stagnation, and the gaunt figure of starvation would be staggering along the highways of the world.

By tools we mean everything that is used to facilitate the production and distribution of what we need and must have, as well as those things that are used to aid in the production of many things considered less essential by some writers because they are classed as luxuries.

When we consider the tools of labor we

are brought face to face with an endless number of useful things; indeed, it would take more than a single book merely to name them, without any reference to their origin, history or uses. Pen or pencil, in the case of men and women who write for a living, or for men and women who keep books, or preserve public or private records, or who do any other kind of clerical work; or an axe and a saw, in the case of a woodsman; or hammer and tongs, in the case of the blacksmith; a hoe and a plow, in the case of the farmer,—these and many others that might be mentioned are simple tools. Anything from the simplest and crudest of things, up to the most intricate and complex of our mechanical creations, may be regarded as a tool, *so long as it answers some useful purpose in the processes of production and distribution.*

Viewed in this broad utilitarian light, a perfecting press is as much a tool in the printing business as the printer's rule, and a mogul engine is as much a tool as the wrench with which the railroad engineer tightens his loose screws.

If we could assemble in one building all the tools with which men and women labor in all the different countries of the world today we would have what would represent

an approximately complete history of human culture in its various phases of unfolding. Not only so, but, step by step, we could trace our economic history from the simplest of its beginnings up to the present, for such a display would not only show us the crude, awkward tools used by savages, but the tools also of the Barbaric Age, and of our own time. Moreover, such an exhibition of the things we use, things we have improved, and things we have outgrown, would render still more impressive the gratitude we owe for what we found ready for our use, convenience and comfort when we arrived on the scene of action.

What tools have added to the man power of the world it is impossible to tell. No reliable estimate of these meaningful statistical facts is anywhere available, so far as we know. But we know, in a general way, man has multiplied himself many times. Man has increased his physical power just as he increased the range of his natural senses.

There is a saying among carpenters that the strength of a nail is equal to a man's. The holding power of some nails is very much greater than a man's. In the case of the screw, which belongs to the nail family, this holding power is many times multi-

plied. Men probably morticed or pegged timbers together before they knew anything about the nail or the screw.

A long time ago some man stuck a pole under a log, and by pressing down on the other end of the pole, found that he could greatly multiply his lifting power. This was the beginning of the lever principle. We passed from the lever to the pulley, and thus began the development of wheels. First we used only man power to operate the lever and the pulley, just as we first used man power to propel the two-wheeled cart, the forerunner of our vehicular wonders. Then we tamed wild animals and used them to increase our power to lift and to pull; and then, by slow degrees, we passed into the age of steam, and from steam into the age of electricity.

Meanwhile we had discovered ores and found out how to convert them into metals, out of which we began to make many things we had before made out of wood, stone and clay, and many other things we had never before made, but which had become necessary on account of the new demands of progress. It was the invention and construction of these things that made it necessary for us to find new agencies of power to lift and pull, such as steam and

electricity, for animal power alone would no longer answer our purposes even with the aid of the lever and the pulley and other hand contrivances we had pressed into use.

Thus, through centuries of struggle, was slowly evolved the Age of the Machine, an age that is very wonderful, not only because of the vastly increased power it has given the worker over the raw materials and forces of nature, but because also of the cleverness and variety of things man has been able to invent and construct to make work easier and less irksome and to greatly multiply his power for efficient service.

The Tools of Agriculture

Marked Progress in Farm Economics—New Implements Replace the Old—Agriculture Now a Science—Power Cultivators and Other Modern Things on Farm—One Man Doing Work of Twenty Men and the Problem Thus Suggested—Should Not Get Pay of Twenty Men—The Reason.

Lesson No. 16

Progress in the invention and construction of tools has not been more marked or more beneficial to mankind in any walk of life than in agricultural pursuits. It is a long cry from the simple implements used on farms even a quarter of a century ago to the more complex implements now in use in our fields of grain, cotton and other basic farm products.

"The man with the hoe" of the painter's and the poet's fancy is extinct in all progressive countries. Instead of a stupid biped leaning upon a crooked stick and gazing upon the ground, with a brutish slant to his head, and "the emptiness of ages in his face," we find now a man of substantial intelligence, and of wide and cheerful outlook, tilling the soil in all civilized countries.

In America particularly progress in the

invention and making of new farm implements, and in the substitution of motor power for animal power, has been most impressive. The harrow with wooden teeth, the hayfork made of a forked sapling, the crude wooden seed planter, gates and doors on wooden hinges, and pegged or latched with wooden devices, are things so rent that many men still living not only know about them, but once used them. Yet these things would be as much out of place on the modern American farm as would the crooked stick with a long handle, the ancient hoe made the subject of Millett's painting and Markham's verse.

Agriculture has become a science. The evolution of the hoe, under the application of scientific methods in agricultural pursuits, is an interesting and instructive chapter in the history of tool development. The hoe was the forerunner of all the implements with blades and teeth that we now use in preparing the soil, and in cultivating and harvesting the crops we grow on our modern farms. Even the latest and best improved of our motor cultivators owe their existence and usefulness to the simple wooden hoe with which man first learned how to break and pulverize the soil. Besides there have been intermediate stages of develop-

ment in the history of agricultural implements, periods which stoutly link together all the ages of time and render more or less absurd the arbitrary divisions of time made by many older and contemporary economists.

We have not made agriculture what it is today. We have only helped to do it.

We did not discover the principle upon which we have built our complex cultivators. These were passed on to us, and we have elaborated and improved them. We must not, therefore, take unto ourselves the whole credit for the enormous increase in the power we now exercise over the raw forces of nature, and conclude that because one man can now do the work of twenty on the farm he should therefore receive the pay of twenty men. Part of the wealth our one man produces with his machine, and the power he uses to operate it, must go to reward other men who have, in an indirect way, made it possible for him to do the work of twenty men.

If a study of utilitarian economics should accomplish no more than to clear up this one vital confusion in the labor economics of today it would be well worth while, for all this demand for *more, more, more*—more wages, more profits, more everything,

—grows out of a failure to understand the profound economic truth that each of us, on the farm or in the factory, is actually doing only a fraction of what we seem to do.

Only a part of my day's work is mine, and it is the smallest part of it. Most of the credit for the day's result must go to other men.

And this is as true in our factories, in our mines and elsewhere as it is on our farms, for everywhere we will find that men have increased their power for service by using both the talent and the labor of other men.

The Tools of Industry

Definition and Scope of Industry for Utilitarian Purposes—Listing Tools Used in Making and Using Lumber—Other Illustrations—Mutual Dependence of Tools, Men and Industries—Vital Significance of Knowing True Economic Relationships.

Lesson No. 17

Following the rule we have adopted in these lessons, we are not going to give any arbitrary meaning to the word industry. What we shall say about the tools of industry, however, for the purposes of this lesson, will relate mainly to the tools used in manufacturing establishments; and here again we will find man's genius and ability for multiplying his own power over the raw elements of nature displayed in many useful things and in many ways.

Go into the woods where a giant fir is felled and a log sawed from it; follow the log to the mill where it is converted into lumber; follow the lumber to the carpenter or the cabinet maker where the material cut from your giant fir is put to its final uses in the making of a house or some simple piece of furniture for the home, and then, reviewing and summarizing all the

processes from the very beginning of these useful energies, count and classify the tools used to achieve the final result. Here we have a comparatively simple process in the conversion of raw material into a finished product, a product in which we realize a utilitarian value. Shall we begin our count with the axe and the saw used to fell the tree? No; for the axe, and the handle in the axe, are the *finished products* of other energies which called into play other tools in other industries engaged in converting woods and metals into useful shapes; that is true of the saw also; it is equally true of every tool we have seen applied to our fir log. Indeed if we desired to make a complete list of all the tools that have made it possible for us to use the material of the giant fir to build a house or make a piece of furniture, we would have to pass through many factories and examine many different processes before we could list all of them.

If we should go into a flour mill, a steel plant, a cotton or woolen mill, or into one of our great packing houses, or into any one of a long list of highly useful and necessary industrial establishments, we could find a still more difficult problem if we undertook to list all the tools that contributed,

directly and indirectly, to the output of these plants.

What we would find, in the sum of it all, would be a condition of mutual dependence of tool upon tool, of material upon material, of industry upon industry, and of one group of men upon another group of men, in almost endless variety, until we had compassed practically all of the complexities of our industrial, commercial, agricultural, financial, and scientific achievements. The axe and the saw are mutual aids. We need our combinations of wood and metal. Besides we must fuse our ores, and have many kinds of wood, and we must have many kinds of workers, many kinds of tools, many kinds of processes in many different parts of the country, where topographic and climatic conditions are wholly different, before we can realize the harmonious and useful results that are now familiar to us even in the simplest and smallest of our industrial plants.

This dependence of thing upon thing, and of men upon men, this merging of interests and energies in our modern economic life, is a fact of profound importance, and yet a fact which too often is ignored by economists of all classes and all grades of opinion. But this disregard of our eco-

nomie fact of vital meaning is by no means confined to economists. It has crept into the industrial and general business life of America, and the world, has given rise to bitter class prejudices, wickedly influenced political groups, and not infrequently has found expression in unwise and intemperate legislative enactments. The result has been hurtful, for it has merely intensified foolish economic antagonisms, and, instead of helping to clarify some of our real industrial problems, it has left them still in confusion and with no real progress toward solution.

What we need, in such circumstances, is a clearer understanding of our economic relationships, and a more intimate familiarity with the mutuality of our economic obligation. *We are not independent; we are dependent, thing upon thing, man upon man, industry upon industry*, and when we begin to realize this truth, not only will the tools we daily use assume a pleasanter and a more poetic aspect, but we will also find ourselves making new appraisals of the men about us and putting a new and higher estimate upon the meaning and value of life as a whole.

The Tools of Commerce

Relation of Commerce to Industry—Functions of Agriculture, Industry and Commerce Stated—Some of the Tools of Commerce—Old Terminology and Technique Disregarded—The New Classification, Its Purpose and Meaning.

Lesson No. 18

There would be little to say of commerce, or the tools of commerce, if we did not have factories, farms and mines, just as there would be little to say of factories, farms and mines, and the tools used in these spheres of useful effort, if we did not have a commerce devoted to the distribution and sale of the products they yield.

Agriculture and industry produce things having utilitarian value. Commerce distributes and sells what Agriculture and Industry produce; and in these processes of distributing and selling commerce uses a very large number of things which, for economic purposes, may be classed as tools. The grocer must have his scales and his measures, the butcher his knife and his cleaver; the dry goods merchant must have his yard stick, the tailor his tape and his scissors, and so wherever we turn we will find that men engaged in different commer-

cial pursuits are using sometimes the same and sometimes different tools to facilitate the sale and distribution of their wares.

By common custom weights and measures were recognized long before we gave legal sanction to existing standards. Indeed custom had so impressed the need of them upon the public mind that Englishmen insisted upon a recognition of these standards in the Great Charter. True, it is not usual to class these things as tools; nevertheless they are tools and have very high utilitarian value. The foot measure or the yardstick is as much a tool in the hands of the merchant as it is in the hands of the carpenter, and the tailor without his needles and his scissors is as unthinkable as a woodsman without his axe and his saw.

The tools of commerce cover a wide range and include a vast variety of things. The pencil with which the clerk records his sales; things supposedly so inconsequential as pins and needles; the laboratory equipment of the chemists who test and analyze solids and liquids to determine their fitness and value as foods and for many other purposes; implements of great delicacy used by druggists and jewelers; the agencies of transportation used in the distribu-

tion of products,—vehicles, engines, cars, ships, flying machines,—these, for utilitarian purposes, may fairly be regarded as some of the tools of commerce.

In a word all the devices used in salesmanship, in standardizing articles of commerce in the matter of quality as well as quantity, and all the agencies used in the distribution of these articles, may properly be classed as the tools of commerce.

Even pipe lines used for the distribution of water for various uses,—for power, for irrigation or for home purposes; or for the distribution of gas or oil; or lines of communication, such as the telephones, telegraphs, cables and the wireless systems,—these, too, are tools and tools of indispensable utilitarian value in modern commerce. Storage plants, refrigerators, elevators for grain, containers of little and large capacity, and an almost endless list of things in common daily use by tradesmen help to make up a rather remarkable collection of devices used to expedite the movements of modern commerce; and if objection is urged to the classification of these things as *tools of commerce* we wish to remind the student that we are not teaching old economics, and are not much concerned, therefore, about either the technique or the terminology of

the old school. We are discussing economics from a utilitarian point of view and in the light of modern conditions, and if we should permit our reasoning to be colored by a foolish respect for old rules, rules we have outlived, we would defeat the supreme purpose we have in view, which is to freshen public interest in a supposedly dry science by stripping it of the untruths and the half-truths that cumber and confuse it and giving to it the body of a helpful, wholesome and cheerful philosophy.

Tools of the Arts and Sciences

What Science Contributes to Modern Economic Life—Some of the Tools of Science—Devices in Daily Use—Safety Appliances—Mechanical Protection Against Fires and Crimes—Tools of Art—Music as an Example.

Lesson No. 19

What to include and what not to include in a discussion of Arts and Sciences, and the part they have played in our economic development, presents a difficult problem. We have attained such high standards in agriculture, in industry, in commerce, in the making and marketing of what we produce, in the packing of goods and in arranging them for public display, that if we could put all our fields, factories and stores together, and roof them over, we might very easily look upon it as a great art museum. But our concern now is with the utilitarian value of our arts and sciences, and the nature and character of the tools used in these spheres of endeavor.

It would be easier to pick out the things science has not contributed to our economic development and general progress than it would be to name the things science has done for us.

Science is our constant aid in agriculture, in industry, in commerce, in every little and large division of human labor. It has dreamed out and practically worked out the principles upon which we have built all our mechanical contrivances and has given to us a vast and almost unlimited control over the forces of nature. Without the aid of Science and the tools with which science has provided us, we probably would be still groping in the shadows, relying more upon luck than upon law for each day's progress and using force instead of reason in meeting the problems of our time.

But what tools has science used in rendering us this aid? We examined a few of them in the series of studies devoted to Natural Weapons. They include all of the five natural senses, sight, hearing, the sense of smell, taste, and the sense of touch, and all the agencies used to extend and amplify these senses. They include all the instruments used to determine the properties of things. Instruments which have made wire and wireless communication possible; the delicate and diverse things with which our chemists labor; the instruments with which we weigh the air, measure wind velocities, forecast changes in temperature, foretell the coming of violent winds, and record

tremors in the earth caused by volcanic eruptions and settlements in old faults in the earth; the Xray which enables us to photograph broken bones or foreign substances buried in the human body; all the nice instruments used by surgeons and physicians in restoring men and women to a condition of economic efficiency,—these and a vast array of other things are constantly used by men of science to sustain and further our economic progress, general safety and social well-being.

Moreover science has contributed many useful devices for protection against fire and crime; indeed since the installation of the latest and best improved mechanical devices to guard against fires and crimes one fireman and one policeman have become equal to many firemen and many policemen under the old order.

Science has made even more important contributions in the many safety appliances that we now use in industrial pursuits to protect workers against serious bodily injury and possible death, and in many other things which enable us to keep our foods pure and wholesome for an almost indefinite period of time.

What are the tools of art? A good writer, with a clear mind and a clean conscience, can do much with one lead pencil or one pen and an inkwell. And think of the high positions to which many men and women have climbed over the keyboard of the typewriter. Or take the home town band: Each instrument in it is a tool for the man who plays it. Many men and women make their living out of their ability to perform artistically and pleasingly on various musical instruments. But whence these instruments men and women use to delight or depress us? Behind each of them there is a long series of important and highly useful economic events. It has required labor, and unusual skill, and, in some instances, tools of a very delicate kind to give form and value to musical instruments. Not many of our musicians could make the instruments upon which they perform with such exquisite art. Paderewski cannot make a piano. Caruso did not ride into fame singing songs of his own creation. None of our virtuosos have been able to make the instruments upon which they performed, or to write all the scores they have interpreted. None of our great actors and actresses have become famous interpreting plays of their own creation.

Nor do we owe many of the helpful accessories of the modern stage to them.

The point we are here again seeking to emphasize is the *mutual dependence of men and women in every sphere of human society*, in the arts and sciences, no less than in the commoner and more prosaic callings of everyday life.

This mutuality of interests, this merging of the talents and efforts of individuals and groups of individuals, should make *the good of all the concern of each and the good of each the concern of all* in modern society.

What we have said of music will give us a key to the utilitarian values of all the other arts, and opens up a rather alluring field for investigation and study on the part of ambitious students. For instance: What tools are used by painters? By sculptors? By decorators? By architects? By the makers of vases? Or the designers and makers of our expensive and luxurious fabrics? Or the many useful and ornamental things we find in the modern home? Tools used in the production of such exquisite creations are worthy of study, for they have not only high utilitarian value, but an origin and a history also that are of profound meaning from the standpoint of utilitarian economics.

The Tools of Construction

Tools That Have Distinctive Constructive Use and Value—Constructive Tools Sometimes Destructively Used—Implements of Peace and Progress—Misuse and Abuse of Tools and Talents—The Two Ways.

Lesson No. 20

Certain tools used by mankind have a very distinct *constructive value*. Others may fairly be classed as *tools of destruction*. But here again we will experience the old difficulty we have frequently adverted to in these lessons, namely: The almost impossible task of drawing an arbitrary distinction between the forces and tools used in our economic life.

Take any of the constructive tools, for instance, we use in times of peace. The things that we use to build houses, railroads, ships, airplanes, and in the making of guns and explosives, and other things in time of peace may also be used to construct forts, battleships and munitions in times of war.

Of the tools that have a distinct *Constructive value* we may mention the plow, the cultivator, the harvester and other im-

plements used in agricultural pursuits. Then there are a vast number of tools used in making what we have come to know as luxuries and non-essential articles, such as jewelry and other personal ornaments, certain confections and drinks and other such things, which may be classed as not destructive in character.

Type, the printing press and all the many things that go to make up a modern printing plant cannot be said to be destructive in their own right; and yet we know that these things frequently are put to very destructive uses. When used to inflame popular passion, stir up prejudices and hatreds, preach false doctrines, destroy the reputations of men and women in both public and private life, encourage disobedience to the law, incite violence and bloodshed and endanger the public peace and the public safety, the tools of the printshop can become as destructive as the most powerful and dangerous of our explosives.

But these same things can be put to constructive uses equally as influential for the good and upbuilding of society. By standing for right and reason as against wrong and the loosened passions of mankind; by upholding the integrity of the law and

preaching patience, tolerance and justice, and by flaring the truth when truth is unpopular, type and all the other tools of a printing plant can be used to build up a sane, wholesome and constructive public opinion and thus help hold in restraint forces of evil that would batter down orderly institutions and substitute the chaos of anarchy for peaceful conditions and normal, healthy progress.

Many of the bloody spasms which mark and mar the pages of history have been due more to the *destructive use of constructive tools* than perhaps to any other single cause.

Many men and women use their eyes to impair their own economic and social usefulness and to destroy their own characters. They read the wrong literature; get the wrong view of public questions; fill their minds with wrong information; absorb wrong opinions, and, by the slow processes of saturation, become utterly blind to the truth and thus lose sight of all utilitarian values in our economy.

Yet we do not always put the eye to destructive uses. Most men and women put a higher value on the sense of sight and use it for constructive and noble pur-

poses. They read good books; come to know good and beautiful words instead of words that are coarse, wicked and vulgar; get the just and the cheerful view of things; color their own opinions by the opinions of men and women of light and leading; and thus build up and strengthen their own characters and become useful and more efficient as members of society, and, as they grow in the graces, add to their own and the happiness of their fellows.

Once let us realize the utilitarian value of things, of the senses, of all our natural weapons, and all the tools we use in doing the world's work and contributing to the general wellbeing of mankind, and it will be easy enough for us to understand the difference between the *destructive* and the *constructive* use of these things; for what we have been saying here of a few of the things we use applies to nearly all of the things we use.

Always two courses are open to us when we come to use a talent or a tool of any kind: By taking one of them, we will make *wrong use* of talent or of tool, and *reap evil*; by taking the other we will make *right use* of it, and *reap good*.

Tools of Destruction

Some Things That Are Exclusively Destructive—Battleships, Bombs, Floating Mines and Other Things—Utilitarian Value of Some Agencies of Destruction—Constructive Energies Frequently Depend Upon Destructive Agencies—Subsequent Studies.

Lesson No. 21

When we come to consider the *tools of destruction* we naturally think of battleships, long range guns, submarines, floating mines, bombs, poison gases and many other things that have, in the forms which they assume, no peaceful and constructive uses.

Constructive tools, constructive material and agencies, and constructive skill are used to make these exclusively *destructive things*. In classing these things as *exclusively destructive* in character we are not unmindful of the theory of their *defensive value*, or of the theory that while they are destructive in themselves, from an economic point of view, they *frequently prevent greater destruction* than they cause. But we are measuring these things by utilitarian standards and are classing them according to the relation they bear to normal

social and economic conditions. The materials out of which the agencies of destruction are made, the tools used in making them, and the man power employed in doing the constructive work might easily be put to other and different uses, though we are not here venturing any opinion as to either the wisdom or the necessity of the one course or the other. Our only concern is in the economic aspect of the problem, viewing it always from a utilitarian standpoint, and having a regard only for utilitarian values. We have defined these values, we think, with sufficient precision to enable the student to search out his own conclusion in any case which may seem to be debatable.

Poison gases, like some of the heavy and destructive explosives of different kinds used in war might be used for peaceful and constructive purposes also, though we do not know enough of these things to know what such uses might be. We know, however, that poisons and gases of practically all varieties have a *possible utilitarian value*, and it is not unreasonable to assume that some of these frightful compounds, such as were used in the recent great war, might have value of this kind.

Dynamite is a powerful agency of destruction. We are familiar with some of the destructive uses to which this agency may be put. But we are also familiar with the peaceful and constructive uses of dynamite; as in blasting in railroad construction in mountain regions where tunnels are bored through heavy, solid rock formations, or in clearing land of stumps and logs, and in various other kinds of constructive and highly useful work.

In considering tools and all agencies that are destructive in character we should not overlook the vital economic truth that *destruction* often is necessary to accommodate the processes of *construction*. We must tear down an old building, or an unfit building, before we can build a new fit structure. We must dismantle old machines to make room for new and better ones. These processes are as pronounced in human society as they are in domain of nature, and are as necessary also.

It is plain, therefore, that the tools of destruction have their proper *utilitarian value*, as when they are used to further and facilitate *constructive energies* made necessary by our growing economic demands.

No attempt is made in this series of lessons on tools to exhaust the subject; indeed that would be an impossible undertaking from the standpoint of utilitarian values, for tools, viewed from this standpoint, include all the things we use to keep the industry and general business of the world on a progress basis.

But these studies, in brief outline, of the nature and function of Tools, coupled with preceding lessons, which had to do with Man, his place in industry, and his duties and obligations, put us in a position to take up in subsequent lessons the big subject of Production.

In a word, we have considered Man and the Tools with which he does his work; we shall next see what Man does with his Tools, how he uses them, and what he produces with them.

LESSONS No.
TWENTY-TWO, TWENTY-THREE,
TWENTY-FOUR, TWENTY-FIVE,
TWENTY-SIX, TWENTY-SEVEN,
TWENTY-EIGHT, and
TWENTY-NINE

Who Is a Producer?

Production Defined—Prime Factors in the Processes of Production—Some of the Energies and Agencies Involved in These Processes—Many Persons and Forces Employed in Making Things of Use—Simple Illustrations Show Difficulty of Finding Producer.

Lesson No. 22

In attempting to point out some of the prime factors in production, and the utilitarian value of each of these factors, we should first make plain precisely what we mean by production.

Production, for our purposes, and for all legitimate economic purposes, may mean one or the other of two things: It may mean the sum of the energies employed in making useful things, or it may mean the sum of things thus made. Thus when we speak of the production of wheat, we may mean the number of bushels harvested in a given season, or we may refer to the energies involved in planting, cultivating and harvesting wheat.

In the course of these studies we shall have occasion to use the word production in both of these senses, though, in the main, the word will refer to the various energies

that contribute to the processes of production. These energies extend over a wide range, beginning with the simplest of our farming operations and climaxing in the activity of the most complex and most wonderful of our mechanical devices. Nature's energies, as in the flow of streams and the ebb and flow of tides, and the energies of the worker, of capital, of the thinker, all contribute to the processes of production, and we shall have occasion in these studies to consider the function and importance of each of these agencies.

No part of economics is more interesting, or more far-reaching and diverse in its ramifications, than the vital part which has to do with the processes of production; and no part of economics is so little understood even by respectable economists.

Studying production from a utilitarian point of view, we shall undertake to avoid much of the confusion into which other economists have fallen, and thus, perhaps, help to clear the popular mind of misunderstandings which have become, in recent years, a prolific source of bitter antagonisms, and a breeder of discontent and unrestrained violence.

Our task in studying the problem of production is to find out the nature and im-

portance of all the agencies contributing to these interesting and intricate processes, and to apportion credit according to the utilitarian value of the service rendered by each agency.

Of course in what we say of the word "producer," we are not unmindful of the fact that the word, in popular usage, has a very definite meaning. But we wish to point out the error involved in the common use and understanding of the word, for this error, we believe, is responsible for many other errors that burden the economic thought of the day.

The wheat farmer is not a *producer* of *wheat*; he merely plants the seed, cultivates the plant and harvests the grain. Wheat is *produced* by many agencies, some of them very remote from the man who takes care of the plant and harvests the grain, and that is true of practically everything we produce.

Who is a producer? More error has been piled around the word "producer" than around almost any other word in modern economics. This is written with an ordinary pencil. Who "produced" the pencil?

The *final act of production* was performed by the user when he sharpened the point of the pencil. It was not *usable* until this

act was performed. Yet the user of the pencil who performed this simple, but *necessary* act, did not produce it. Nor did the man who cut into proper shape the wood out of which it is made "produce" it.

Somebody, and a different somebody, supplied the lead. Some other somebody supplied the chemicals used in coloring the wood, and a long list of somebodies supplied the implements, and machinery, and power necessary to the production of the pencil.

Moreover, the materials used in making the pencil, and the materials used in making the mechanical devices used in making it, were gathered from widely separated points. Transportation, and the facilities necessary before transportation becomes possible, intervened between points where the raw materials were gathered and the point where they were assembled, and again between the point where the pencil assumed shape, and the store where the user finally bought it.

Who first discovered that carbon crystals could be used to make marks on smooth surfaces?

Graphite is the name we give to these carbon crystals used in making the lead for our pencils.

Whoever made the discovery contributed something toward the *production* of lead pencils.

We are glancing now *only at a few* of the *hands* that have contributed something towards the *production* of a thing so common in every day use that its history has almost ceased to be interesting. If all the hands wrapt up in the history of a lead pencil could be raised, so that we might count them, but only those having some connection with the processes of production, we would be amazed, not only by the number of hands, but also by the variety and economic importance of useful energies loosened by these processes of production.

We are still considering the question: Who is a producer? We have not answered it; but we have progressed far enough to understand that *pencils are not produced* by workers in *pencil factories*, though these workers play a vital part in the processes of production.

Where and when production begins presents one of the most difficult of all economic problems, for *production*, when we consider an article finished for utilitarian purposes, is merely the culmination of many energies, some of them reaching back

into ages so remote from our time that it is impossible definitely to trace their origin.

We nibble a piece of cheese. Who made the cheese? Not any of the persons who had anything to do with it from the time the milk out of which it was made, left the goat or the cow, to the time when we bought the cheese. Nor was it produced by the goat or the cow. We convert milk into cheese. We get milk from the udders of goats and cows. But goats and cows *do not produce* milk. The goat's and cow's part in milk *production*, outside of the energy they expend in feeding, is confined to the extraction of lacteal properties from the food they consume. They do not *produce* food. Here we find the planter, cultivator, cutter and thrasher of grain, the haymaker, and a long list of other persons usefully contributing to the *production of the milk*, out of which another group of persons made the cheese we are now nibbling. Nor is that all. Who first tamed and domesticated the cow or the goat? Who first discovered that milk from these animals is good food for human beings? Who first discovered that the milk of goats and cows could be converted into cheese? All these questions, and many more of like import, must be answered when we come

finally to answer the question: Who produced the cheese?

The same method must be followed when we consider any other article of common use and value.

We hear a great deal of the producer, much of it altogether unscientific, and wholly misleading because of the false assumption that the person who *completes* the *processes of production* is the producer. As a fact he is only one link in a very long chain, an important and necessary link, to be sure, but only one among many equally as important and necessary links in the processes of production.

In modern industry, and in utilitarian economics, the word producer must be considered in two distinct relations. But in neither case is it sufficiently apt or accurate to justify an *absolute classification* of any person as a *producer* in the full and legitimate meaning of the word. When we speak of a shoemaker as a *producer* of shoes or a shinglemaker as a *producer* of shingles, all we mean in either case is that these persons have *completed* the *process of production* in the case of shoes or shingles.

The logical conclusion to be drawn from these reflections is that it is *absolutely unscientific*, and therefore inaccurate, to

speak of any person as a *producer* except in the *purely relative* meaning of the word.

In no case can we *complete* the *processes* of *production* Today without drawing on the energies and talents of Yesterday; and if we attempt to leave Tomorrow out of our reckoning, we will leave hope out of it, for Tomorrow is not only a *Market place* for our wares, but it is also the *home* of our *dreams* of reward.

Nature's Share In Production

Impossible to State Nature's Full Contribution to Productive Processes—Nature Supplies Materials and Forces Used in Production—Exemplary Value of Earth Worm's Work—Shows Benefit of Cultivation—Winds, Tides and Flow of Streams—Other Natural Aids.

Lesson No. 23

When we speak of *nature's share* in production we have no idea of undertaking the impossible task of defining exactly the extent and value of nature's contribution to production; indeed, we cannot exactly define the share any of the agencies have in piling up the sum total of the things we now produce. At the same time, from the standpoint of utilitarian economics, in which we are seeking to give new color and new meaning to an old science, it would be a mistake not to give very serious consideration to the part nature plays in all our useful energies.

In the first place we must go to nature for *all the materials* and *all the forces* we use in the processes of production. Not only so, but many of our most useful and valuable ideas in mechanics and in other applied sciences, are either borrowed from

nature or suggested by the operation of the natural forces around us. Nature had been using the flow of water to sluice hills and cut through hard, rocky surfaces of the earth long before we learned how to do the same thing with pumps, pipes and hose; nature used the winds to scatter seeds and to distribute various forms of life over the earth long before we had discovered the use and value of sails as an aid to navigation and commerce.

Darwin devoted an entire book to a discussion of worms that burrow the surface of the earth and the vital part they play in the vegetable kingdom. These worms form a kind of digestive system for plant life, breaking and crushing stems and leaves, and in other ways help to keep the soil in fit condition to take care of the seeds and roots nature must rely upon to revegetate vast areas of the earth's surface. So well is this work done that even the most delicate of our plants find it possible not only to maintain themselves, but also to reproduce themselves in the apparently hard soil over which we walk in rural districts. Thus it is conceivable that the earthworm may have suggested many things to us in the matter of cultivating the soil and in

taking proper care of the many useful and beneficial plants we have domesticated.

The uses to which we put the winds, the tides, the flow of streams and other natural energies in our everyday economic life are too familiar to need special emphasis. Yet we are still far from realizing the *maximum use and value* of these agencies. In time we will harness and use a vast amount of energy that is now going to waste all around us. We are only at the beginning of the almost unlimited use to which we may put the power of our flowing streams, our tides and our winds.

Besides, consider some of the other uses we make of water in our modern economic life. We float a big part of our commerce on it; we use it to make the steam that drives the wheels of industrial plants; we convert it into ice and thus use it to preserve vast storehouses of food against the deteriorating influences of summer heat; we use it to keep our city clean by washing away the impurities that might breed diseases and endanger life and we rely upon it to protect our big and little urban centers against fire.

Moreover, water is a prime essential in the preparation and mixture of many of our most valuable foods; indeed, some of

our foods would be not only unpalatable, but impossible without water.

Here we are considering only some of the *natural forces* and only *part of the part* they play in modern economic life.

Take water, for instance, when we have converted it into steam: Without again drawing on nature's storehouse for wood, or coal, or oil, we could not convert water into steam. We would not have the necessary heat. Nor would we have ice in the necessary commercial quantities unless we had heat. Nature provides us with the materials to be used in the making of heat. But whence the coal, the oil and the wood? Without the sun's heat, and the tremendous and vital earthly energies loosened by it, we would not have coal, or oil, or wood. The heat of the sun, a *natural agency*, has made possible these chemical combinations, and many others, that we daily use in our economic life. Indeed the consequences of the withdrawal of the sun's heat and energy from the earth are so appalling, in the view of some scientists, that we cannot even think of them without shuddering.

If we go to nature for the energy, or for the things we depend upon for the energy we use in modern industry, we must also go to nature for the materials upon

which we are to use this energy, and also for the materials we use in making the tools and other mechanical appliances and devices we employ in converting raw things into useful shape. In a few words, for all of the things and agencies having *utilitarian value*, we must, in the final analysis, depend upon nature. Nature's share in production, therefore, is very great, so very great, as a fact, that if we were to attempt to state it in terms of mathematics we would scarcely be able to understand it.

The Worker's Share In Production

Considered as Unit, Worker Is Only a Fraction in Productive Processes—Utilitarian Standard of Valuing Productive Service—Error of Regarding Finisher of Article as Producer—Personal Unit as Basis for Determining Service Value—Prices, Wages and Profits—Labor Cost in Final Stages of Production Nominal.

Lesson No. 24

No economist worthy of the name would attempt to understate or undervalue the worker's share in modern production, nor should any honest economist, as a mere pander to the prejudices and passions of men and groups of men, attempt to overstate and overvalue this factor in production.

Considered merely as a unit, among many other units equally potential and equally valuable as contributors to the sum of our productive energies, the worker, measured in terms of manpower, is a mere fraction, though a very necessary and very vital fraction.

When we say the worker is a *necessary* and *vital* fraction in the processes of production we have in mind the part *each unit*, that is, *each individual*, must play in order

to achieve a given result in industry. One unit must start the energies that are to end in a *finished product*, a product ready for use, and having utilitarian value in at least a potential sense; and many intermediate units must carry these energies forward until we reach the point where some unit must contribute the final energy which is to convert the raw material into a finished product.

The *common* and *costly error* in modern economics is in regarding the finisher in a long series of productive events as a *producer*; for this error inevitably has led to an overvaluation of the services rendered by the final unit in productive processes, and to an undervaluation of the services rendered by units equally as important and necessary during the long processes that culminate in a finished product.

No error in modern economics has been more prolific of harm, nor has any error done more to confuse and bewilder students of economics, than the wholly *untenable assumption* that the finisher of an article is the producer of the article.

As a simple economic truth if we should today set ourselves to the task of *finding the producer* in our modern industrial system, we would need something more than the

lantern Diogenes used in his search for a wise man. Plainly it is a question whether we can anywhere, in any sphere of useful activity, put our hands upon a man in industry and say: "Here is a producer." Only in a very limited sense can the *finisher* of an article be regarded even as a complex of the energies which have resulted in production, for it cannot fairly be claimed that all the physical and mechanical energy, and all the skill necessary to production depend finally and absolutely upon the application of the energy and skill of any particular finisher. It would make no difference, for instance, to timber cruisers and timber cutters, or to the men employed in a sawmill, whether the lumber is to be converted into a *finished product* by cabinet makers, or builders of houses; *their productive energies would still find expression* in the finisher's work, regardless of the final utilitarian form to be assumed by the material they helped to produce. This is as true of metals and other materials as it is of woods.

Moreover, we frequently find *finishers* using mechanical aids, just as other units in the process of production use mechanical aids, to greatly increase, *but in a nominal sense only*, what they contribute to produc-

tion; and this brings us to the crux of the problem of the worker's share in production, and what he should receive in return for his contribution in labor and skill.

The worker's share in production begins with the first application of labor or talent to raw materials, and does not end until the finished product is in the hands of the person who is to use it.

Within this rule we must include *all persons, all tools and machines and makers thereof, and all agencies necessary to transport, handle and distribute any article of common use and value.*

Each worker who has contributed to the result here considered should receive fair and just remuneration for his services.

Production is the combined result of many energies and many talents, and each person should be paid in wages or salary a sum based upon the value of services performed.

While the *market price* of the *finished product* does not absolutely determine the amount of wages to be paid the persons who have contributed to its production, it is nevertheless a vital factor, for the obvious reason that the capital invested and involved in these productive processes must be allowed a fair margin of profit (1) to

take care of unliquidated labor cost and other legitimate overhead charges, and (2) to provide for such extensions and expansions as might become necessary in the successful operation of the plant. But we are not here concerned with an analysis of wages further than may be necessary to find out approximately what would be a just apportionment among workers of what Marxian economists mistakenly call *surplus value*. These economists make much of the fact that *finishers* of *products*, whom they call *producers* utterly in defiance of simple reason, get only a small per cent of this so-called *surplus value*, taking no note whatever of the vital fact that other workers who have contributed to the production of the *finished article* have also taken their toll for a worker's share in these processes.

What the average worker of today contributes toward production is very small in comparison with the total value of these processes. It is determined very largely by *individual skill*, *individual industry* and *individual efficiency*; and when we come to define the share of the worker in production, or the share of any other person or agency, we must deal with the problem as a simple unit, one among many units contributing to the same result, and we must

deduct from it the value of services rendered by all other units and all other agencies of whatever kind before we can arrive at a reasonably just and safe conclusion.

The cost of labor in the final stages of production is a small fraction only of the total labor cost. It is erroneous, for instance, to assume that the labor cost of a pair of shoes is to be determined by what it costs to make the shoes in a shoe factory. There is labor cost in stock raising, in the tanning of hides, in the transportation of the hides, in the construction of suitable buildings for shoe making, and in the manufacture of proper machinery for a shoe factory. Besides we must take into the reckoning the labor and talent required to organize the enterprise, establish credits and man and manage the plant. These are all necessary factors in the processes of production, and men who perform these various services are workers, and should come in for a proper share of both the credit and the compensation that go to workers. We thus get back to each man as a unit in these productive processes, and must measure the value of each man's services to the industry according to the nature and importance of his work, and the degree of skill, industry and efficiency displayed

by each worker. Any other rule, we think, is not only violative of sound economic principles, but very often does grave injustice to men employed in industry.

What we are seeking to impress on the student in this lesson on "the worker's share in production" is the fact that the worker who finally concludes the processes of production *contributes only a very small part of the labor necessary* to produce the article. Take the case of a worker, a baker, for instance, who *finishes* the productive processes in bread making: He did not plant, cultivate, harvest and mill the wheat, nor clear the land on which it was grown. He did not make any of the implements used in planting, cultivating and harvesting wheat. Nor did he build the mill in which the wheat grain was ground into flour, or make any of the mechanical appliances used in grinding the grain. The grain and the flour were transported in carriers not supplied by the baker. Nor did the baker make the yeast, soda, salt, sugar and fats used in the processes of bread making. He did not make the mixing trays, pans, spoons and other things used in mixing and baking bread dough. He did not build the oven in which his bread is baked nor supply the fuel which

gives him the heat he needs to bake his bread. The baker's contribution toward the production of bread, therefor, is small. It *represents only a fraction of the total labor cost* in bread production, and this is as true of any article we produce today as it is of bread.

Capital's Share In Production

What Is Meant By Capital—Property Not to Be Excluded from Just Remuneration—Profits Provide Necessary Funds for Expansions and Other Legitimate Purposes—How Capital Contributes to Productive Energies—Some of the Elements of Capital in Industry—Distribution Dependent on Capital Facilities—Error in Regard to Capital's Reward.

Lesson No. 25

While we do not intend to give Capital any narrow definition in these studies, we shall, for the purposes of this lesson, deal mainly with that part of Capital which is made up of the accumulated products of labor—lands that are improved and productive, buildings, tools, machinery, railroads, ships, money, credits, and a considerable number of things used in the productive processes of today.

By the unescapable logic of modern economic conditions, and practices that have come down to us through the centuries, we cannot exclude *property*, either tangible or intangible, from an important place in the processes of production. Nor is it now conceivable that the time will ever come when we can wholly exclude property from a fair and just remuneration for the uses to

which we put it in industry and in general business operations. How otherwise can we provide for replacements and repairs; for improvements and extensions; for new buildings and new machinery; for experimental enterprises in new fields of venture; for the investigation and opening of unexplored areas; new mineral deposits, new possibilities in agriculture and horticulture and many other things? Obviously property must yield something over and above the cost of labor and upkeep in order to make adequate provision for these contingencies and many others made necessary from time to time by new demands and a wholesome increase in the number of persons wanting and needing employment. While the facts here recited bring us face to face with the whole big problem of *profits*, we will defer a consideration of profits in detail until we reach another period in our studies, for our purpose, in this lesson, is to inquire into the nature and extent of capital's contribution to productive processes. We have considered the worker's position in these processes, and have suggested a basis upon which we may possibly arrive at a reasonable approximation of the utilitarian value, in terms of wages, of services rendered by the worker.

We found that the individual worker's share in production, considered as a unit, but representative of a group of like units, was only a fraction of the total sum of energy expended in the production of any given article. By the same reasoning we will reach a similar conclusion in regard to Capital.

Let us, if we can, make this point clear: We will take a man and a saw in the lumber industry. The man is a *labor unit*, representative of a group of like units, and the saw is a *capital unit*, representative of a number of like units. Each of these units contribute only a fraction of the energy necessary to the production of lumber. This rule, applied to each group of labor units and capital units in the lumber industry, is the basis upon which we determine the utilitarian value of the services each group of units performs.

Now let us consider some of the *capital elements* absolutely necessary in the processes of production. We must have raw materials and the means of procuring and assembling these materials. We must have transportation facilities—tracks, engines, cars—and we must have buildings in which to work and houses in which to live. We must have food supplies, fuel and other in-

dispensable things. We must have machinery. All these things require a *cash outlay* in advance of a *cash income*, for these things must be provided *before we make or market anything*.

Out of what fund are we to provide these preliminary essentials and pay for this preliminary labor?

There are only two funds upon which we can draw: One of them represents the *accumulated products of labor* we inherit from Yesterday, and may be money, or collaterals convertible into money; the other is the *credit fund*, which means that we must borrow the money we need, and thus, theoretically, if not actually, hypothesize prospective income from the plant. In the first place we would be using our own money or other property, for which we would have a fair legal and moral right to make a reasonable charge; and in the second place we would be using the money or other property of others, for which they would have a fair legal and moral right to make a reasonable charge.

The next problem confronting capital in the processes of production is to market what is produced. The market must be found. The finished products must be sent

to the market. Here again we are confronted by the necessity of *cash expenditures* in advance usually of any *cash income*.

All these contributions to the processes of production must be made by Capital; and they depend upon property already accumulated, or upon credits based upon such property or extended in anticipation of prospective income.

Here we have considered only some of the simplest things Capital *must do* before the processes of production are to begin in any given plant. Yet even in this simple setting we find many complexities, many kinds of materials, woods and metals in all stages of manufacture, and in many forms, ranging from rough timbers to the most highly finished products in woodcraft, and from nails and simple steel rods to hinges and locks, and the delicate parts of powerful engines in the domain of metals—all of them *capital units*, and some of them *representing investments made many years before*.

The workers who made these things were paid for making them WHEN THEY MADE THEM.

Capital, in one form or another, and in

one place or another, has carried, without final reward up to this stage, the cost of producing these things; for labor, at each stage in the process of production, has been paid for the services rendered, and paid, too, out of accumulated assets which form part of our capital fund.

Capital is never rid of the cost burden incident to the production of an article until the article is passed to the final user of it. And even then, as a capital asset in the hands of the final owner, it still stands, in utilitarian economics, as the representative of what it cost to produce it and place it in its final setting.

In the very nature of things, despite popular opinions to the contrary, Capital is never adequately compensated for the work it does in modern society. It cannot be otherwise; for if we should pay in full, on the basis of actual benefit, the debt we owe for what we have and what we are, it would empty Today's treasury and still leave the larger part of Yesterday's obligation unliquidated. The obligation is no mere chimera. It is very real. But we shall not have to pay it. Nobody exacts it. Most of the men and women who bequeathed us these heritages, these tools, these

machines, these conveniences and comforts, all these things that make up our stock of useful capital, are gone, and we may continue to use them without fear of interruption or foreclosure. Nevertheless a very solemn and sacred duty rests with us.

We must use rightly and for right purposes the things we have; and we must also be as thoughtful of the men and women who are to come after we are gone as the men and women of Yesterday have been of us.

Any consideration of the functions of Capital in productive processes would be incomplete if it did not include all the agencies used in transporting both raw materials and finished products. We must have tramways, railroads, steamboats, ships, barges, and vehicles of many kinds. Besides in the procuring and assembling of raw materials, and in marketing and distributing the finished products, other lines of communication, the telephone, the telegraph, the cable and the wireless must play some part; and all these things are a part of the capital we use to further and facilitate the productive energies of the country.

Capital is a prime factor in production,

and while it requires the intelligence and skill of the worker to energize it and keep it in motion, its functions nevertheless are distinctive, and the utilitarian value of its services should be taken into the reckoning when we come to distribute the benefits of our productive efforts.

The Thinker's Share In Production

Tools, Machines and Other Appliances in Part Products of Inventors—Industrial Captains, Financiers and Promoters as Contributors to Production—Workers Who Think as They Work Add Most to Productive Energies. Also Further Labor's Interest and Progress.

Lesson No. 26

If we should attempt here even a meager outline of what the Thinker has contributed to the processes of production, we would have to traverse the whole field of invention, review the history of practically all of our sciences, and record a long succession of improvements in mechanical appliances, and in industrial and business methods, reaching back into centuries very remote from our own time.

Forerunning every tool we have, and every machine of little or large importance, and every device of every kind and character now used in productive processes, there was somewhere in some thinker's mind a dim outline of the thing that was finally to assume useful form.

Thought is the great creative force in mechanics, as it is in every other sphere of usefulness. The steam engine and the cot-

ton gin, like the saw and the axe, the telephone and the phonograph, the ox-cart and the flying machine, the shuttle and the lathe, had their *real beginning in the mind of the thinker*.

But we are not so much concerned here with what thinkers among our great inventors have contributed and still contribute to production as we are with what is contributed by thinkers of another type and in different spheres.

Our mighty captains of industry, our great financiers, great organizers of capital, and daring promoters who have ventured into new fields of exploitation are also among thinkers who have contributed enormously toward an increase in our productive energies.

The men who established the chartered companies in America loosened energies destined to find expression in that intense and wonderful industrial system which has made America one of the richest and most powerful countries of the world. The irony of fate may have deprived some of these men of material reward; but surely they cannot be denied a place among thinkers who have contributed greatly to the processes of production, and, therefore, to the

wealth, well being and happiness of mankind.

But if we wish to find the *thinkers who have contributed, and still contribute, most* to productive processes, we will find them among the sober, thrifty, thoughtful workers who keep the wheels of industry going, and who have enabled us to establish new high standards of service and efficiency and sense still more alluring possibilities in the industrial life of the nation.

Bessemer, the English engineer, made a great contribution to modern production when he found a process for making steel by taking carbon out of molten iron by the air-blast. But we would not have realized the full benefit of Bessemer's discovery except for *workers who think while they work* in our great steel plants and in allied industries. So, too the inventor of the steam engine made no small contribution to productive processes; but his work is small in comparison with the efforts of *thoughtful stokers*, who, by *thinking as they stoke*, contrive to get the greatest possible number of units of heat out of a given quantity of coal. And so it is in every branch of our modern industrial life.

The man who thinks as he works travels

faster and further than the man who does not think.

Whatever progress the worker has made in efforts to improve his condition, increase his wages, and advance his general interests, is due to the *thoughtful worker*—the worker who, being thoughtful of self and eager to advance his own interests by increasing his own efficiency, has also been thoughtful of his fellows, his associates in the plant and the managers and owners of the plant. In the *thoughtful worker* we so frequently meet in industry, we meet again the Maximum Man discussed in an earlier lesson; and usually, if we follow his course, we will find him not only a leader in the group to which he belongs, but a citizen of very sterling worth and recognized integrity in all the relations of life.

If more men would *think as they work*, more men would succeed.

Work is drudgery only to the man who does not think as he works.

There is no pleasure, no profit in thoughtless labor.

When we put our mind on what we do, whether the task is little or large, a new, cheerful light shines on our efforts, and our energies glow and quicken under the stim-

ulating influences of a desire to do our best.

What we are discussing here is *constructive thinking* on the part of the worker; thinking that will lead the worker out of the *slovenly* and *worst way* of doing a thing into the *best way* of doing it; thinking that will eliminate useless movements and a waste of energy; thinking that *shortens the distance* between *initial processes* and *final processes* in production; thinking that makes the burden of each day lighter than the burden of the day before; thinking that puts into each instant of time and into every ounce of energy the *best of the worker's skill and talent*, thus enabling him to play, not the irksome, gloomy, unhappy part of a drudge, but a man's part in his chosen sphere of activity.

There is *good* and *bad thinking* in industry, as there is in politics, in philosophy and economics; *straight thinking* and *crooked thinking*, *constructive thinking* and *destructive thinking*; and it is not difficult to find the line of demarcation between the one kind of thinking and the other, for it will be shown, not only in the manner of the day's performance, but also in the sum of the day's output.

Destructive thinking destroys the work-

er. It destroys the job. *Giving less in service* is not the way to *get more in wages*. Workers who *think constructively*, and, by thinking, seek to increase the sum of what they contribute to productive processes, rise more rapidly in the wage scale and go much further in industry than the *saboter who thinks destructively* or the *shiftless slacker who thinks not at all*.

It is easier for the worker, interested and enmeshed in his labors, to *think his way to success*, than it is for him, in noisy rostrums or elsewhere, to talk and heckle his way to success.

There is a tribute to be paid the *quiet thinker in industry*, the man who loves his labor and smiles as he toils, and who lets the best there is in him flow into whatever he does, for, in the final reckoning, much of the credit for our achievements in industry must be set down to men of his type.

The Muscle's Share In Production

Marked Decrease in Part Mere Physical Strength Plays in Industrial Operations—Mind, Machinery and Improved Methods Replace Muscle.

Lesson No. 27

There is still work in industry for muscle to do; but what we have said of the thinker's share in production makes it plain that muscle now is of less importance than it once was in productive processes.

Mind, machines and new methods in practically all spheres of industrial endeavor have narrowed the usefulness of muscle as a factor in modern economic life.

We do not mean to undervalue the part physical strength *per se* must play in modern industrial operations. What we are seeking to emphasize is that the *strong arm* and the *strong back* which once bore so much of the weight of industrial operations are not now prime requisites, for they have been replaced by machines and other appliances of vastly increased utilitarian value. Of course there are still many kinds of labor to be performed by men who are physically strong; but, comparatively speaking, the spheres in which we depend

exclusively upon *human muscle* are few. We must still rely, to be sure, upon strong, well men, men who are physically sound and fit, to carry on our great industrial enterprises; there are still things in industry machines cannot do for us; but, in the main, we have grown out of the old condition when a man could convince us of his fitness and efficiency as a workman by rolling up his sleeves and crooking his arm at the elbow.

It is not enough now for a man to be *physically well and strong*; we want him to be *well and right above the shoulders also*. We want his mind to be sound, clear, unweakened and unconfused by erroneous conceptions of the part he is to play in industry, and by wholly false notions as to what he should give, and what he should receive in return for it.

In our economy the *muscle man* is as archaic as the *cave man*. We have passed out of the *muscle period* into the period of *mind mastery*, and, in consequence, have sloughed many of the galling hardships that once ground workers in industry down to low and unhappy levels.

The decline of the muscle in industry began when *workers in industry began to think*, and with the early appearance of

machines and other mechanical devices, and a steady increase in the number and kind of these helpful aids, muscle has become a minor and subordinate factor in our productive processes. Even many of our so-called unskilled workmen find their muscles now relieved of burdens they once carried, for these, too, in the performance of their duties call mechanical appliances and mechanical power to their assistance, and thus frequently find it is easier to do ten men's work than it used to be to do one man's.

While the utilitarian value of this revolution in our economic life is not yet fully recognized by many workers, who still persist in thinking in terms of the *muscle age*, there is yet among workers a growing tendency to appreciate the significance of the change, and, in many instances, a hopeful disposition to use, up to the maximum of its value, the new and alluring opportunity thus afforded. In a word many thoughtful workers realize that we have passed in industry from the *supremacy of muscle* to the *supremacy of mind*, and this fact is full of fine meaning for the future of mankind, for it is a certain forerunner of economic stability, economic peace and the happiness for which we are striving in these economic studies.

Unfinished Things

Definition and Function of Things in Intermediate Processes of Production—Always Burden on Capital—Labor Cost Liquidated When Labor Performed—Capital Burden Heavy and Lengthy.

Lesson No. 28

Unfinished things represent intermediate stages in the processes of production. Cloth, for instance, does not assume the form of a *finished product* until it has been converted into a suit of clothes, a dress or into other useful shape. In the case of cloth, too, there are other intermediate stages, and all of these are important, from an economic point of view, for the reason that they represent the value of important factors in productive processes. Both capital and labor have contributed to these processes; but there is this important fact to be considered in connection with any *unfinished thing* among our industrial assets:

At every intermediate stage in the processes of production the labor cost is liquidated; but the *unfinished thing* remains a burden upon capital, not only during all the stages of its unfinished state, but frequently for a considerable length of time

after it has become a finished product. Take cloth again as an illustration: If it is made of cotton, the men who planted, hoed, plowed, picked, ginned and baled the cotton are paid for the service they render when they render it. Workers in mills who convert cotton into cloth are paid for their service when it is rendered. Thus the cotton grower carries the cost burden of cotton from the time of planting the seeds to the time when the cotton is sold in the market; another group of men carry the burden until the cotton is sold to the mill; the mill carries the burden until the cloth is sold to the merchant or the tailor, and the merchant or tailor must carry it until, converted into wearable or other useful form, it is sold to the final user of it. Capital, therefore, does not get final release from the cost involved in these productive processes until the *finished product* has passed finally into the hands of the consumer.

Not enough attention has been paid to this vital fact in our economic life. We speak of it as a vital fact advisedly; for this burden on capital, evident everywhere in vast quantities, not only of *unfinished things* not yet in a marketable condition, but of a vast quantity of *finished things* also not yet sold, is frequently continued

through a long series of years, and while the burden may be shifted from one group of persons to another, it nevertheless remains a charge against the capital fund. In different language, these *finished* and *unfinished things* not yet sold to final consumers represent invested money upon which no return has been made, and none can be made, in a final sense, until the whole account is liquidated by a sale to the consumer.

Labor has been paid; but capital must wait, some times for years, for its return on investments in these productive processes.

What is the total value of the *unfinished things* we usually carry as a necessary part of our *capital stock*? How long, on an average, are these things carried before they are turned into *finished things*? What is the total value of these *finished things*, and how long, on an average, do we carry them?

These questions are asked merely for their suggestive value. They are important questions, for they touch upon important phases of an economic life, and have a very intimate bearing upon some of our industrial problems, as we shall see in subsequent studies.

Both the *finished* and *unfinished things* here considered are *things not now in use*, and therefore are not to be confused with the things that already have passed to the final stages of production and distribution.

When an article of use is bought by the person who is to use it, all antecedent cost incident to its production and distribution, including both labor and capital costs, is finally wiped out, in theory at least, and these parts of the economic account are closed. But so long as the article remains either *unfinished*, or *finished*, but *unsold* to the consumer, the obligation is unliquidated and the account is open, except as to the labor cost part of it which, as we have seen, is satisfied when the labor is performed.

Finished Things

Final Processes in Production—Function of Finished Things—Things Made of Finished and Unfinished Things—Final Liquidation in Sale to User.

Lesson No. 29

The desk on which this is written is a *finished product*. It is made of a combination of *finished* and *unfinished things*. The wood in it did not reach the *finished* stage in productive processes until it assumed its present form. True, it had gone through certain processes we use to produce what we call *finished material*. But this finished material had no utilitarian value, except in a possible and potential sense, until it was used to make the desk.

Stains used to color the desk and oils used to polish it represent a combination of finished products. The screws used to hold the parts of the desk together may also be regarded as finished things.

The economic history of this desk is not unlike the economic history of any *finished product* we might consider after it has passed finally into the user's hands. It is a long, interesting history, for it goes back

into the forests where we got the wood, into the mines where we got the metals to make, not only the screws and nails, locks and handles for cover and drawers, but the tools also used in making the desk and everything that is a part of the desk; it would be a big part of the history of chemistry, and would also show us much of the history of what we know about mixing and using colors.

But here we have a *finished product* at the end of a long journey. All the expense incident to the production of the desk, or any part or material used in its production, has been liquidated, and the desk has taken its place among the capital assets of its owner and user.

These statements apply with equal force to all things which have reached the end of their economic journey, so far as the processes of production and distribution are concerned, and are being put to the uses they were designed to answer in our economy. We have many such things. They are, in part, the things with which we do the world's work and represent a big part of the world's wealth. We have already discussed the part *finished things* play in the production and distribution of the things we need for sustenance and con-

venience in modern life. We find them in our work shops, in factories and on farms, in mines and in the marts of trade, on land and sea, in the air and under the earth—everywhere we turn where men are engaged in useful pursuits we find some of these *finished things*. And we find many of them, too, in our great storehouses and on the shelves of our merchants.

Whether any particular *finished thing* is active or inactive, whether it is in actual use or is awaiting final placement, it is a potential factor in our economic life, for, once finished and ready for use, it becomes an addition to our vast stock of *marketable and usable assets*, and, normally, exercises an influence in determining price levels and wage scales in those spheres of industry and trade connected with its production, distribution and sale. If, for instance, there are on the market a largely increased number of *finished things* of a certain kind, with no proportionate increase in the demand for them, we face a situation which may slacken productive energies and tend to lower wages in certain industries engaged in the making of these things, while at the same time we may note a downward trend of prices because the market is overstocked.

When we come to consider *prices* we shall make a close examination of this economic function of *finished things*, for here we are concerned chiefly in a suggestive statement which has to do only with the nature and character of finished products, and the part they play in our productive energies when in *active use*, as in the case of tools and machinery, and when not in *active use*, as in the case of *finished things* unsold and not in use except as capital assets which may become the basis of credit extensions and answer other indirect uses in our economy.

LESSONS No.
THIRTY, THIRTY-ONE,
THIRTY-TWO, THIRTY-THREE,
THIRTY-FOUR, THIRTY-FIVE,
THIRTY-SIX, and THIRTY-SEVEN

What Is Wealth?

An Outline of Utilitarian Definition of Term—Wealth Does Not Consist of Mere Ownership—Use at Base of All Economic Values—Solomon's View of Wealth, and Benefits Enjoyed by Owners and Users—Wealth in Work—Some Examples.

Lesson No. 30

In both its legal and its popular meaning, *wealth* is a word of *relative significance*. Usually the popular idea of the *man of wealth* is the man *who owns most*, in a material sense, in the community in which he lives, and, per contra, the *poorest man* is the man *who owns least*. Actually our *poorest man* may be our *richest*, and our *supposedly richest*, our *poorest*.

What is wealth? It is not the *mere ownership* of material properties. Nor is it in the *mere possession* of material assets of value. *It is in the use we make of what we have*, whether as owner, possessor or user.

One man may *own* a thing, another may *possess* it, in a legal and moral sense; and still another may *use* it. Take our telephone: They are *owned* by one group of persons, *legally possessed* by another, and *used* by a large number of persons not to

be considered as either *owners* or *possessors*, in a technical sense. Who derives the *greatest benefit* from telephones? Obviously the persons who use them. Indeed, if it were possible to compute in terms of money the actual value of telephones to these different groups of persons, the value of this instrument to persons who use it in ordinary business relations would be so great in comparison with its value to its owners that even the average thoughtful person would be surprised by the bare statement of fact.

In view of such obvious facts as these it is plain enough that wealth is not the mere ownership or possession of *more things* or *more money* than is owned or possessed by other persons. A man is not necessarily wealthy merely because he owns and derives an income from what another man uses.

Sometimes we seem not to have learned a great deal about some things during the march of centuries between Solomon's time and our own. "Where much is," Solomon said, "there are many to consume it, and what hath the owner but the right of it with his eyes?" Of "great riches" Bacon said substantially the same thing; "there is a custody of them," he said, "or a fame

of them, but no solid use to the owner." In view of some of the abnormal things of our own time, and certain extravagancies of thought these things have excited, not only among the masses, but also among men and women who pretend positions of leadership by coarsely pandering to mass prejudices, we might be inclined to modify, in some slight degree, the dicta of both Solomon and Bacon; but such modification as we might make would not impair the fundamental wisdom and profound philosophic significance of the sayings of these wise men, and the unescapable conclusion reached by them that a man is not wealthy merely because he owns many things that are in use.

No man is wealthy solely because of what he owns.

Indeed a man might have all the gold that has been mined and coined from Ophir to the Rand and still be among the poorest of the poor. If we strip him of his inclination and his capacity to organize and establish new enterprises, and direct the energies of men; if we shut him off from all the buoyant excitements of an industrial and financial career; if we tell him there is nothing useful for him to do, no useful demand for his talent, his services or his

gold, he would become very poor indeed, and would be as helpless and unhappy as if entombed in a windowless cell made of his gold.

There is no real wealth in the ownership of idle properties.

Real wealth consists in the use of things, in making them reproduce themselves and pay their own way by taking care of a fair proportionate share of the day's economic burdens.

Much of the quarrel with wealth grows out of a total misunderstanding of the nature and function of wealth.

A loaf of bread and a pound of meat, a suit of clothes and a pair of shoes normally mean as much to one man as to another. Nor can the richest of our factory owners fill more than *one man's job* in his plant.

The trouble with too many of our unripe economists is that they assume that *wealth is something exclusive*, something that is in the hands of the few for the sole benefit of the few, instead of regarding it as something diffusive, something that is used to energize and benefit the whole mass of society.

We need not go beyond the simple meaning of the word to get its real significance in utilitarian economics. Wealth means

weal. Weal means well. To be wealthy, therefore, means to be *doing well*; and if it may be said of a man that he is *doing well*, it is safe to assume that there is *good* for others in what he does. So, too, we speak of the *commonweal* when he discuss the good, or the well being of all, and we speak of the state as the *commonwealth* for a like reason.

No man has wealth except in his work.

Wealth is in what we do rather than in what we have. And if we do much, most of what we do will be for others, for we are but one among many; and besides, taking us man at a time, there are not many things, among many very necessary things, that we can do for ourselves. In economics, therefore, no less than in philosophy, the wealthiest man, in any period, is he who does most for mankind.

Users of Wealth

Ownership Less Important Than Use of Wealth—Real Value of All Wealth in Its Use—Users Derive Larger Benefit Than Owners—Ownership Is Only Nominal—Simple Examples Illustrate Relative Benefits of Owners and Users of Wealth.

Lesson No. 31

The *ownership* of wealth or capital is of less consequence than the *use* of wealth. Ownership at best is nominal. Use is actual, complete, absolute. Ownership is not always profitable. But the *user* of capital always reaps a profit out of it, and the profit is large or small, according to the degree of intelligence and efficiency displayed by the user.

Wealth has no value except in use.

Wealth as a rule, bestows larger benefits upon its *users* than upon its *owners*.

Nor is it possible to deprive the user of wealth of these benefits without hurt to the owners. For when the use of wealth ceases to be of benefit to users, *use ceases*, and the wealth becomes idle; and idle wealth is of no value to its owner.

We are frequently reminded that a large per cent of the wealth of America is *owned* by a small per cent of the people of the

country. From an economic standpoint, the fact has no very vital significance if we are correct in assuming that *wealth has no value except in use*.

Take a group of men who *own* a big industrial plant. If the plant is idle, that is, if it is not *in use*, it is of no value to its *owners*. Nor is it of any value to workers who could operate it.

It becomes of *value to owners and workers only* when put to *use*. And out of this use, whether profitable or unprofitable, in final terms, the workers, who are the *users* of the plant, derive a greater proportionate benefit from its operation than its owners derive.

More than fifty-five cents out of every dollar earned by American railroads in 1919 went to the men and women who worked for the railroads, the remainder going into taxes, upkeep, betterments, extensions and so forth, with the result that the 700,000 persons who *nominally* own the railroads derived practically no benefit from ownership.

Workers are the *first users* of *capital*, and therefore derive the *first benefits* from its use.

Suppose we take a bale of cotton and finally *complete* the *processes of production*

by converting the material into socks. Between the time when the planter sowed the seed, and the time when the salesman sold the socks, who has derived most benefit from this product? Its *nominal owners*, or its *users*, at the different stages in the processes of production. When we have paid the planter, the cultivator, the picker, the ginner, the spinner, the weaver; and the workers who have helped to transport the material from place to place; and the men who have made and operated the machinery used in the processes of production; and the men who made the dyes used in coloring the socks, the amount the *nominal owners* would get out of this bale of cotton would be small in comparison with the amount the users of capital, that is, the workers, would get out of it.

The larger part of the value of the socks we have made from our bale of cotton was contributed by labor, and the larger part of this value has been returned to labor.

Or suppose we take a pair of socks made of wool. The wearer of the socks, the *final customer*, paid \$1.00 for them. The grower of the wool got only a few cents for the quantity of wool used in making the socks. Why this difference between what

the grower gets and what the consumer pays for the wool in a pair of socks?

The constant and ignorant assumption is that the difference between the wool grower's few cents for his wool, and the \$1.00 the consumer pays for the socks, represents a *profit* which flows into the pockets of the *nominal owners* of the material out of which the socks are made. Yet this *increased value* in the price of the wool has been *contributed by labor* and the *larger part of it returned to labor* at different stages in the processes of producing the socks.

Here again the *users of capital*, the workers, and not the *nominal owners*, are capital's chief beneficiaries.

So far we have spoken only of *workers as users of capital or wealth*, and of the *immediate and direct pecuniary benefit* they derive from such use.

Workers derive other benefits, not less important, from the *use of capital* also.

No intelligent man can use a tool or a machine of any kind without getting something more than his wage out of it. The very use of the thing, however common and simple it may be, becomes a part of his education, and, by just so much, increases

his personal capacity and his efficiency as a workman.

When we *know how to use well* even the simplest of our tools, we have achieved independence; and if we master completely the complex mechanism of one of the great machines used in our industrial plants, we really pass into the ranks of the rich and powerful. Indeed we miss utterly the larger and better meaning of aristocracy if we fail to include in this class workers of talent who achieve complete mastery over the weapons they use in industry, for these workers, rising above the dead level of mediocrity and drudgery in the use of tools, win marked distinction by the cleverness and brilliance they put into their efforts, and may fairly be regarded as real aristocrats.

Moreover, it not infrequently happens that mere contact with a tool or a machine will, in the worker's case, loosen useful mental energies, and lead to inventions of great value to industry, or to changes and improvements in tools or machines that will result in new economies of vast benefit alike to workers and employers.

We speak of the *ownership* of wealth or capital as *nominal*. We have in mind, not only the usual hazards, such as fire, or oth-

er destructive agencies, business reverses due to periodic depressions or bad management, but the sovereign rights of the state, and of minor political divisions; for always ownership is subject to the will and pleasure of the government.

In the final analysis, the title to all property, even in a democracy of the American type, is in the sovereign, which is the state, and it can be taken at any time for public use, regardless of the use to which its *nominal owners* may be putting it in spheres of private business activity. The only condition imposed upon the sovereign by our jurisprudence in such cases is that *nominal owners* must be *duly compensated* by the state.

If an industrial plant, or a business establishment of any kind or a home, is on land needed to perfect a link in a necessary public highway, the government can condemn it, pay for it, and take it.

Such properties may also be condemned and taken over for quasi-public use, such as for railroad or other public service rights-of-way.

Workers are not compelled to share in any of the losses due to these changes, except perhaps such losses as may result from a temporary lack of employment.

When we divide up the Dollar that is used in industry, we find that the workers in industry get the biggest part of it.

Workers use tools, machinery and other equipment in industry that belong to other men, and have been contributed by the labor of other men.

Workers in industry frequently *use the credit* and *get their living out of the credit* of the nominal owners of the plant in which they are employed.

Workers thus get the benefit of the talent, resourcefulness and physical capital of men who promote industries and build and operate industrial plants, and this benefit is proportionately greater as a rule than the benefit derived by the owners of the capital.

The fact of the matter is that the bulk of the *value* which arises from the use of Capital finds its way *into the pockets* of the *worker*.

Obviously, in such circumstances, *mere ownership* of the Capital used in industry is of less importance, from the worker's standpoint, than the *use* the worker is to make of it.

The value of all Capital, whether money, muscle, mind, machinery or materials,

whether fixed or circulating, tangible or intangible, *is in its use*.

We do not *own* money.

We *use* money, and the only value money has is in its *use*. We are speaking now from the standpoint of *utilitarian economics*, from the standpoint of the great *principle of utility* in our industrial life and without regard to the forced and fictional refinements of economists, old and new, who too often have clouded truth by flights into realms of pure speculation. We must draw the line sharply between the *fictional* and the *real*, between the *theoretical* and the *practical*, for our present problems in America are *intensely real*, *intensely practical*, and in dealing with them no matter how many rosy and alluring refinements may loom to tempt us, we must keep constantly in mind the *utilitarian aspect* of all values.

The *value* of things is in the *use* we make of things. This *use* is sometimes seemingly *passive*.

We stroll into an Art Museum and pause to gaze upon a great painting. It is motionless, silent; yet it speaks to us, stirs sleeping sentiments within us, spiritualizes our emotions; and when we leave it, though we never touch it, we take some subtle and

sublime part of it back into our prosaic world, where by sheer inspirational vigor, it may loosen useful energies and give us a finer taste for the work we are fit to do.

The *value* of the artist's painting, greater than mere ownership, is in the use we have made of it. We have rubbed our own soul against the painter's soul, and have struck off sparks of inspiration to cheer and strengthen us as we go about our little business.

How often we get the same quality of inspiration from the clever artisan!

If we could only shoe a horse as well as our favorite smithy can do it; or fell a tree as quickly and as accurately as a woodsman we know; or hammer a small lump of gold into a big, shining and shapely vase, like an old craftsman of our acquaintance, —if we could only do any one of a thousand things as well as they are done by men we know, how clever, how fortunate, how happy we would be!

The *value* of these examples also is in the *use* we make of them.

If an understanding of *utilitarian values* will help us to get rid of the confusing and pernicious error of laying too much stress

on the importance of the *ownership* of *things*, and not enough on the importance of the *use* of *things*, many of our economic problems will become simpler, clearer and very much less vexing, and final solution will be easier.

Producers of Wealth

Many Persons and Energies Produce Single Article of Use—Two Old Theories of Source of Wealth Not Applicable Now—Labor and Soil No Factors in Wealth Production—Reproductive Wealth—Other New Factors in Wealth Creation.

Lesson No. 32

While we are considering the producers of wealth it may be well for the student to recall what was said in a more general way in the lesson devoted to a study of the producer, in which we sought to emphasize the fact that any article of use and value is *not the product of one person*, but the *product of many persons*. All our properties, fixed and circulating, tangible and intangible, everything that we group under the general name of wealth, represent, in the final analysis, the energies of many persons and the profitable use of many different kinds of talent.

Before the time of Adam Smith the leading economists, notably those of France, assumed and asserted that all wealth came from the soil. Adam Smith held that wealth is the product of labor. In the light of what we now know about the production and distribution of wealth, we are bound

to reject both theories in so far as they seek to perpetuate the fundamental and mischievous economic error that wealth is *exclusively* the product either of the soil or of labor. Both labor and the soil are *contributors* to the *production* of wealth; we may go further and say they are *necessary contributors*; but it would be alike unsound and untruthful, economically, to say that either the one or the other, or that both, can lay *exclusive claim* to the processes that end in *wealth produced*.

Much of our wealth, in part at least, *reproduces itself*; and for long ages before we learned to utilize things now classed among our prime assets, these *reproductive processes* had gone on without any sort of aid from human beings. In some of these cases, as, for instance, in the case of the great forests from which we get our timber, the soil was a factor in productive processes, but not a more necessary factor than the wind, the rain and the sunshine. Our flowing streams, and other water courses, are assets of great value to commerce and industry; while there is some connection between these assets and the soil, still it is not of a kind to justify the conclusion that the tremendous wealth of our water power and water commerce is

due exclusively to the soil. The same remark may be made of our fish industry which, up to a certain point at least, *reproduces itself*.

The point we are seeking to emphasize is that economists who regarded the soil as the exclusive source of all wealth were on unsafe ground, just as Adam Smith was on unsafe ground in regarding human labor as the exclusive source of all wealth.

Wealth is the product of many forces, some of them natural, some of them mechanical, some of them physical and some of them mental; and there are still other forces that contribute to the production of wealth which probably would not come under other of these heads. A farm in an isolated and inaccessible region is worth only a few thousand dollars. But let a railroad skirt it, and build a town near it, and in a short while it may be worth many thousands of dollars. A vast amount of our wealth has come into existence in this way. It is what our economists refer to as the *unearned increment*.

Certain securities also frequently show a vast increase in value because of the development of a new and unexpected situation which will cause a sharp increase in the demand for them. In a great many

instances of this character the wealth of the nation is heavily increased by influences due almost exclusively to what may be called *mass psychology*. A familiar illustration may be found in what happens in a period of excitement due to the discovery of a new oil field. While nearly always there are heavy losses in such periods, due to reckless buying on the part of the public, the net result, in an economic sense, is an increase in wealth, for *established oil securities* are worth more during and after these periods of excitement than they were before. The same rule will be found to operate in almost any substantial field of investment.

Then, too, there is the dollar, in its own right as money, to be considered as a factor in wealth production. The dollar, in the hands of a man who knows how to make the dollar work in useful and profitable enterprise, will reproduce itself many times in the course of a year. Credit is also a big factor in wealth production, credit either in the simple form of one man's confidence in the business ability and personal integrity of another man, or in some other form.

Of course in a great many of these instances we might, with propriety, reason

our way back to the soil, and back to labor; but in no instance would we be justified in the assumption that either the soil or labor can be regarded as the *exclusive source* of the vast additions thus made to our national wealth.

They may be factors. But they are never the exclusive factors in wealth production. On the contrary there is a great deal of wealth in America, and elsewhere in the world, which does not owe its existence either to the soil or to labor, and it is answering a highly useful purpose in our economic life.

Natural Wealth

What the Phrase Means in Utilitarian Economics—Made Up of Raw Materials and Raw Forces—When Wealth Ceases to Be Natural Wealth—Change Comes When Productive Processes Begin.

Lesson No. 33

What we mean by *natural wealth* requires no more than a simple statement; indeed from what we have said in preceding studies we think the student already has a reasonably correct understanding of the meaning of this phrase in utilitarian economics.

But in order to obviate the possibility of misunderstanding we may recapitulate some of the elements of our *natural wealth*.

Of course in an absolute sense all our wealth is *natural wealth*, for all that we have comes from nature's storehouse. But we have given new forms to many of the things with which nature has provided us.

Our *natural wealth* is our *raw materials* and *raw forces*.

Water is *natural wealth*; but when we use the power of flowing water to turn wheels, drive engines and to generate the electricity with which we move trains, energize great industrial plants, and light

our cities, we not only give to this wealth a new form and a new place in our economy, but we vastly increase its utilitarian value.

Wood or metal in the raw is *natural wealth*. The soil, too, in its virgin state, is natural wealth.

Anything ceases to be *natural wealth* as *such* when we apply the initial energies to the raw material in the processes of production.

Thus, clay is *natural wealth*; but it ceases to be *natural wealth* when we put it into a brick mold.

Anything finished, or at any stage of the processes to result in a finished product, has ceased to be a part of our *natural wealth* from the standpoint of utilitarian economics.

Our great forests of standing timber, our unmined coal, ores and chemicals, our supplies of sea food, our wild game, our unharnessed and unused water power, our uncultivated and unimproved land areas, the marble and granite of our hills, the oil in the veins of the earth,—these are among the many things to be included in the vast schedule of our natural wealth.

To, too, we might include our rivers, bays, estuaries, lake and other water courses which play a part in our industrial and commercial life, for all these things have either actual or potential utilitarian value.

Owners of Wealth

Who Owns the Wealth of America?—Small Stockholders in Big Concerns—Popular Errors Regarding Ownership—Importance of Small Owners of Wealth.

Lesson No. 34

Who owns the wealth of America? Contrary to the popular belief the wealth of this country is not owned by a few men and women. When we come to examine the books of the great corporations of America, the railroad and street railway systems, light and power companies, oil companies, sugar refining companies, packing companies, and a vast variety of other organizations engaged in the production and distribution of foods and other things necessary to the comfort and well being of the people, we will find, not thousands, but millions of persons among the actual owners of these enterprises.

While many of these persons have only small holdings, some of them only a few thousand dollars, nevertheless they are among the owners of wealth in America. Not only so, but in some instances the total of these small holdings in the case of some of our biggest enterprises represents a

heavy per cent of the total stock issued by the corporation. We never hear of these small stockholders for the reason that the investor nearly always is in the background. He is not concerned in the actual management of the enterprise; he has merely put his savings into it to shield himself and those dependent upon him against the possibilities of "the rainy day," and must perforce look to others actively engaged in the management of the enterprise to protect him and his interests.

Yet if we associate the name of Hill or Harriman with a railroad, or the name of Spreckles with a sugar enterprise, or tag Rockefeller's name to an oil enterprise, at once the unthinking public will conclude that the enterprise, whatever its nature, is in the hands of a few big men and is *owned* and *operated* exclusively in their interest.

We have some very wealthy men and women in America, men and women of very great wealth, in an actual as well as in a nominal and potential sense. Yet if these men and women should pool their interests and combine all of their available and useable resources, they would have only a small fraction of the wealth of this country and could finance and conduct only a

small per cent of the enterprises, big and little, in the United States. Indeed, if American industry and American commerce had to depend wholly and exclusively upon the useable resources of the few men and women who are supposed to own the bulk of American wealth, industry and commerce would dwindle to alarmingly small proportions. As a fact out of these resources we could produce only a fraction of what we need for bare sustenance.

It is only by pulling the vast army of small owners of wealth into the American investment field, and making profitable use of their savings, that we are able to meet the constantly increasing economic demands of the country. These demands include the demands of men and women for employment, demands for food, clothing, fuel and all other things necessary to our economic and social wellbeing.

Any approximately complete list of the owners of wealth in America would be very long. It would be longer than our tax lists, for many persons own wealth that is not taxed or taxable. As a matter of fact most of us would be surprised at the comparatively small number of persons to be regarded, under proper classification for economic purposes, non-owners of wealth.

If a carpenter has no more than his kit of tools, the rancher no more than his acre, his mule and his plow; the oyster man no more than his tongs and his bottom; the woodsman no more than his saw and his axe; the spinster and the widow no more than what they have saved from meager earnings or small bequests—all these and many others of small possessions are nevertheless among the owners of wealth, and a big part of the mighty total of America's wealth is made up of the small things that belong to our small owners of wealth.

Idle Wealth

Heavy Tax Imposed by Idleness—What Is Meant by Idle Wealth—Waste Incident to Rapid Progress—Idle Men, Idle Machines, Idle Money—What Idleness of Six Million Workers Means—Strikes and Lockouts as Causes of Idleness—Waste Due to Idleness Avoidable.

Lesson No. 35

No tax, from an economic standpoint, is heavier than the tax imposed by *idle wealth* in America. The phrase *idle wealth* is comprehensive. Of course, in a certain qualified sense, as we have seen in a preceding study devoted to certain aspects of wealth, the phrase *idle wealth*, from the standpoint of utilitarian economics, is a contradiction in terms, for *wealth depends finally upon use*. Hence what we say of *idle wealth* in this study will have reference to certain energies and certain properties fit to be used, but which, for one reason and another, or for no reason at all, are not used.

In the principles to be laid down in this lesson not only will we challenge contemporary economic thought, but we will also put the entire American industrial system, as now manned and managed, to a very severe critical test. In a word we will put

both our economists and our industrial system on trial. At the outstart, however, we shall concede that much of our industrial waste, waste of energy, waste of talent and waste of material, is inevitable. We are new, comparatively speaking; our growth has been rapid, and phenomenal in magnitude; we have expanded into new and untried fields; our industrial system is, in a very real sense, a complex of the achievements of science and invention and all the useful and practical votaries of civilization, and it is not less than logical that our economic practices should reflect some of the bewilderment which has come with our amazing progress and sudden rise to a position of world eminence and world supremacy in the vast field of production. Waste, in such extraordinary circumstances, is quite natural. But we have at length reached a point when sobriety of thought, of opinion and of action are necessary, not only to our continued progress, but to the durability and lasting benefit of what we have already achieved.

We wish again to emphasize the distinction between *utilitarian values*, values realized by reason of the use we made of forces and things, and the values that are *utilitarian only in a potential sense*.

USED WEALTH HAS UTILITARIAN VALUE.

UNUSED WEALTH, of whatever kind, has *UTILITARIAN VALUE ONLY IN A POTENTIAL SENSE*.

When we speak of *idle machinery*, *idle buildings*, *idle land*, *idle money* and *idle men* as elements of the *idle wealth* of the nation, we have in mind, therefore, not the *actual*, but the *potential utilitarian value* of these things. Superficially only, therefore, is it a contradiction in terms to speak of *idle wealth*. We go even further and speak of *idle energy*. Ordinarily, and for ordinary purposes, to be sure, we cannot think of *energy* as being *idle*. The words contradict each other. Yet, in utilitarian economics, the phrase *idle energy* becomes, not only understandable, but of very vital significance from an economic standpoint.

An idle machine, or a man out of work, represent *idle energy*. Mind, muscle, materials and a vast assortment of things possessed potentially of very high utilitarian value, represent just so much *idle energy*, that is, so much possible *productive power* not in actual use. It is all *usable*, but not *in use*.

Let us take an idle industrial plant, a sawmill, for instance: This plant is the

final product of a great many useful energies. Some of these energies began in the woods, some of them in the bowels of the earth; they were continued in factories of many kinds and moved along diverse lines until they culminated in the production of a sawmill fully equipped to answer all the useful purposes for which such plants are established. This plant represents *idle wealth*, and the value of this *idle wealth* is the cost of the plant, *plus* the value of a possible maximum output during the period of idleness, *plus* the value of idle labor, *plus* the value of a variety of other energies that depend upon the energies of the sawmill.

If the plant is idle on account of a strike, it is not enough to say that the loss can be computed by adding the loss in wages during the period of idleness to the loss sustained by owners. That is only a part of the loss incident to the idleness of the plant, for when the plant ceased operation many other useful energies dependent upon it were also stopped.

Or we will take a still more striking example. According to a recent statement (June, 1921) there are about 6,000,000 men out of work in the United States. The daily loss due to the idleness of 6,000,000

men is appalling in magnitude. Because of mechanical aids used in modern industry, let us say that one man, on an average, can now do the work that five men used to do in productive enterprises. It is evident, on this basis, that our *daily loss in productive power*, therefore, is not merely in the idleness of 6,000,000 men, but in the total of their *productive power*, which would equal 30,000,000 men when men were unaided by improved mechanical devices. The daily value of the *productive energy* we have thus halted is of staggering significance. Yet it is only a part of the tremendous loss due to *idle wealth* in this country!

The *unused energy* and the *unused skill* of these idle men are as much a part of our vast amount of *idle wealth* as are the plants and properties they could put to profitable use. It is all *economic waste*, and as such is a tax upon the things that we produce, which is but another way of saying that *idleness is a tax the workers must pay*.

We need not here consider the cost of strikes and lockouts except as mere incidents to the general theme of this study; but students who are sufficiently interested will find in these too numerous industrial happenings a not uninteresting aspect of

the subject of *idle wealth* in America. As a fact the idleness due to strikes and lock-outs, the idleness of vast numbers of men and the wage loss, and the idleness of many large industrial plants and the business loss, present, when combined, an appalling form of economic wastefulness in America, —a form of wastefulness that is avoidable, too, by the exercise of a little foresight and a little tolerance and the cultivation of a better understanding of the mutual character of all of our economic problems.

Idle money is idle wealth. The miserly man who piles up money solely for money's sake, instead of putting it into profitable enterprises, is often as much a detriment to himself as he is to society. And this applies as much to a man in the banking business as it does to an individual who hides his money in his sock or stores it in a vault.

For economic purposes there is no difference between an *idle dollar*, an *idle machine* or an *idle man*, for they all are a part of our enormous quantity of *idle wealth* in America.

When we speak of an *idle man* we by no means confine the phrase to the man who works with his hands, whether as skilled

or unskilled laborer. While losses due to muscular or physical idleness are very heavy and make up a considerable part of our idle wealth, they are by no means all that we lose on account of this *idleness* of men. Nor need a man be wholly out of service to come within the classification. As a fact only a small per cent of men in service *do their best and their most*, day in and day out. Only a very few men rise to the full maximum of their physical and mental capabilities; and just to the extent that they fall below this maximum they contribute to the *idle wealth* of the nation, whether the service they render is mental or manual. Nor will we be able to avoid the *economic waste* due to these forms of idleness in industry until we inculcate more rigid and juster views of morality in industry and achieve higher standards of efficiency.

If we could sum up this suggestive study of *idle wealth* in America by a statement in detail of what we lose every year on account of *idle men*, *idle machinery*, *idle lands*, *idle money*, including in the statement the *value in use* of all the intelligence, skill and energy we yearly waste by reason of lack of use, no doubt most of us would be shocked by the magnitude of the total.

Such a statement is not impossible, in at least an approximate sense; and it would profit us to know it in detail, for it would, without argument or other emphasis, at once convince us of the imperative need of ridding our industrial system of all the evils, in both the ranks of labor and in the ranks of capital, that yearly add these staggering burdens to the economic load we must carry.

The Function of Profits

How Betterments and Expansions Are Made—Short-sighted View of Profits by Unripe Economists—Definition of Profits.

Lesson No. 36

Despite what some of our more radical economists may think and say on the subject, we have not yet progressed far enough in our journeyings toward Utopia to do away with *profits* in industry and business generally; and it is rather shortsighted, we think, for any man to look upon *profits* as other than necessary and advantageous, from the standpoint of our economic and social wellbeing.

The function of profits is too well understood to need more than a general statement in this lesson. Profits are used, not only to take care of necessary expenses not included in the wage account, but to make improvements and expansions in plant equipment also. These improvements and expansions are necessary to meet growing demands for products and to take care of a steadily increasing number of men and women seeking employment.

There would be no fund out of which to

make these improvements and expansions if the owners of plants did not get a profit out of the products they put on the market.

Profit, as a rule, represents the difference between what it costs to produce and market an article, and the price for which it sells.

The contention that *the price for which a thing sells is the amount which ought to be paid for its production* is wholly untenable, for the reason that this would enable *present labor* to absorb the full value of all that both *present* and *past labor* have produced. Besides it would deny capital and other necessary and indispensable agents in production both the recognition and the reward to which they are justly entitled. As a matter of fact there is no equitable basis upon which we can abolish the profit system, for the very simple reason that the *capital of today*, including tools, machinery and all that we use in productive processes, is not in any exclusive sense, the product of the *labor of today*.

Men who use this capital should, as a matter of morals, make a fair return to the men who nominally own it; indeed such return is an economic necessity as well as a moral obligation, for our industries could

not keep up with the increasing demands that press upon them if forced to operate without profit. Besides we would lose the incentive and individual initiative which have given to us the great enterprises that have placed us among the foremost nations of the world.

The Theory of Surplus-Value

Fundamental Fallacies of Marxian Concept—Existence of Surplus-Value Defined—Errors Built Upon Wrong Conception of Profits.

Lesson No. 37

What we have said about the *function of profits* in the modern scheme of industry prepares us for a brief consideration of the theory of *surplus-value*, a subject of some importance because of the very large number of persons who have been misled by it. Indeed the only reason for introducing the subject of *surplus-value* at all in these studies in utilitarian economics is to point out some of its fundamental fallacies, and to set aright, if possible, persons who have been led to wholly erroneous economic conclusions because of a belief in the soundness of this theory. The entire structure of Marxian economics rests upon the theory of *surplus-value*.

Marx wasted a great deal of time and space telling what he meant by *surplus-value*. One word would have defined its meaning, and that word is *profits*. Those who accept Marx's conclusions believe that the *worker should have all that he pro-*

duces, and when we understand that they regard the *finisher of an article* as the *producer* of the article, the economic injustice of this notion must be apparent to even the dullest of economists. For if the *finisher* is to be regarded as the *producer*, in any given case, and is to take the full value of the thing he claims to have produced, what is to become of the many other persons who contributed something of energy and talent toward the production of the *finished article*? Moreover what about improvements, new equipment and expansions generally needed to take care of an increased number of men and women who want work? What about the demand for more goods, for increased production?

As a matter of fact the idea of surplus-value is wholly chimerical.

There are no surplus-values in our industrial economy for precisely the same reason that there are none in nature. Certainly we can hardly look upon a thing so necessary and vital as profits as a surplus-value, nor as any other kind of surplus.

Besides how can a thing be of value if it is a surplus, that is, if it is more than we want, or need, or more than we should have?

The whole theory of *surplus-value* is illogical, and altogether wicked in its influences on economic thought, for we may trace many popular errors and fallacies back to this Marxian theory, and these, in turn, are responsible for many of our industrial misunderstandings and controversies.

*LESSONS No.
THIRTY-EIGHT, THIRTY-NINE,
FORTY, FORTY-ONE,
FORTY-TWO and FORTY-THREE*

Old and New Economics

Demand for New Note in Study of Old Science and Solution of Modern Problems—Error of Teaching Principles of Old Economists—Smith and Malthus as Examples—Some of the Mistakes Due to Adherence to Old School.

Lesson No. 38

What is most needed to clear up confusions that now burden economic thought in America is the abandonment of old and useless, and wholly inapplicable economic theories in the teaching of economics.

Books of the older schools of economists will help us to understand the history and development of economics as a science; but these books will not help us to understand the economic relations of persons and things in modern industrial life.

Many of the old principles of political economy, sound enough, perhaps, when first announced, cannot now be applied, and it is misleading to teach them.

Yet, in many of our text books, from which students get their notions of economics, great stress is laid on principles announced by economists more than a century ago, some of them before the American Republic had come into being. It is

not conceivable that Adam Smith, if living today, would adhere to the economic philosophy, in all of its details, he published in 1776, under the title of an "Inquiry into the Nature and the Causes of the Wealth of Nations." Both the *nature* and the *causes* of wealth have changed since Dr. Smith's time, and it is not unfair to assume that the opinions of the able Scotchman on economics would have reflected these changes.

More than a century in invention, in mechanics, in the construction and use of new appliances,—the specialization in craftsmanship, the discovery and use of new materials and new forces, the application of economies in the processes of production, and the ceaseless fight against the waste of energy and materials,—all these and many other things have made profound changes, not only in the nature of wealth, but in the causes of wealth also, since the time of Adam Smith.

Or take a more striking case: In 1798 Thomas Robert Malthus, an English economist, announced the doctrine that *population increases faster than the means of subsistence*. We still find this Malthusian doctrine printed in our text books. When Malthus printed his "Principles of Popula-

tion," in which this doctrine is announced, the actual relation between population and wealth, and the rate at which both had increased, might have justified the doctrine. But in the light of our own experiences, and our own knowledge of world conditions today, can we now accept this as an economically sound doctrine? Can we accept any doctrine or any principle founded upon the recognition of a fixed and constant relationship between the increase in population and the increase in the means of subsistence? Obviously not. Consider the condition of Germany before the recent World War: The people of Germany were smothering, almost literally, beneath the products of their own industry. Not only had they produced faster than they could consume, within the sphere of their own wants, but production had been so rapid that the problem of a market outside of Germany for German products was a factor of some moment in bringing about the greatest war in history. Clearly, the Malthusian doctrine had absolutely no application to conditions in Germany with respect to increases in population and the means of subsistence. Or take France as an equally striking example of the unsoundness of this doctrine: For many years before the World

War France's big problem was a low birth rate. Here, too, was a country where production was increasing at a more rapid rate than population, a condition absolutely contrary to the doctrine of Malthus.

These illustrations are given merely to show the utter impossibility of determining any fixed relation between the increase in population and the increase in the means of subsistence; and what is true of the Malthusian doctrine is also true of many doctrines and principles which have assumed the constancy of laws in many of our text books on economics.

It is as much out of place to teach these old and outlawed principles of economics today as it would be to teach astronomy from books written before the time of Copernicus.

Society, industrially and otherwise, is in a state of perpetual flux. No day is an exact reproduction of the day before. Time is the only element of permanency in our relations, and the sooner we realize and teach these truths in our economics, the better it will be for us.

We do not mean to throw away completely all the old books on economics, nor to ignore completely all the principles to be found in them. These books are facts

in the flow of thought on economic and social relations and contain much that is of historical value.

What we need is *new economics*, with a *new nomenclature*, to be taught in a *new way*. Such is our purpose; and we mean to construct this *new economics* out of the practical materials to be found in the industrial world of today, and not out of the empty husks passed on to us out of centuries that have gone before.

Our *new economics* must be sufficiently elastic to avoid the errors of arbitrariness in principle, so characteristic of the old school, and at the same time accommodate certain principles to be deduced for the purpose of achieving approximate stability in our industrial relations. But when we have realized approximate stability in industrial relations, and have deduced a principle therefrom, it must not be understood that this principle is absolutely unchangeable, for that, instantly, would again plunge us into the errors of the old economists.

We are familiar with changes wrought in the meanings of words.

Economic principles, subject to the same influences, will change their meaning in the same way, and as the meaning changes,

just as in the case of words, we must change the application. This changeableness in principles flows logically from the changeableness in the facts from which we deduce the principles. Take some of our most definite and vital facts in economics, for instance: It requires so much food per person to sustain life, and so many yards of cloth to provide clothes for a man or a woman. A small amount of food will keep one person in prime condition; another person requires twice the quantity, and we will find this same difference when it comes to the quantity of cloth needed to comfortably clothe them.

Obviously it is absurd to deduce a principle, having the constancy of a law, from facts that are so variable. Of course, for convenience, in cases of this character, and in others also, we fall back on the law of averages. But here, too, we must proceed with caution, for our own law of averages, based upon variable facts, is itself subject to fluctuations and change.

In the nation, and in the several states, new policies have been devised and new laws passed to meet changes that have occurred from time to time in our industrial life; indeed changed economic conditions

have made these changes in national and state policies of frequent occurrence.

In teaching economics we must also take equally effective note of these changes. We must realize that we no longer climb up on the roofs of our houses with astrologers to study the positions and movements of the stars. Our astronomers are more accurate. We no longer look to the alchemist to find for us the elements and properties of things dug out of the earth or produced on its surface. Our chemists are more accurate, more reliable, more thorough. It is in this spirit and for these purposes that we have undertaken to redefine our economic relations, so that each of us may have a clearer and juster understanding of our position in the modern scheme of industry, and of the responsibilities that rest upon us.

No man has a moral right to consume all he produces.

Such a standard of morality is lower than the earthworm's; for while the dirt he digs is his food, he is a plowman for nature, and many forms of life, not akin to his own, will reap where he has sown.

More or less, most of us are in the position of our nude, foodless, shelterless friend, for, considering our many wants

and needs, there isn't a great deal we can do for ourselves; indeed, most of us would be quite helpless if supplied with the raw materials out of which to make what we need and the tools with which to make it. How many of us could make our clothes, or our shoes, or the things in which we prepare and serve our food, even though supplied with the materials and the tools?

Many hands have been employed to make the clothes we wear and the food we consume. Turn where we may, whether in our work or in pleasureable recreations, and, if we are thoughtful, we are at once reminded of an endless variety of obligations, big and little, for we are constantly using things made and passed on to us by other hands.

Economics and the Law

Legislative Attempts to Correct Economic Evils Frequently Abortive—Failure to Recognize Basic Fact of Change Cause of Confusion—Industrial Problems Often Aggravated by Clumsy Efforts to Apply Legislative Correctives.

Lesson No. 39

Not a few of the errors made in our time in dealing with economic problems are due to hasty, ill-advised efforts to apply legislative correctives to some of our economic ailments.

True many of the laws we have passed on these subjects are not only justifiable, but are positively beneficial, for they have approximated the relief we had in view when we passed them. But that cannot be said for the large body of laws enacted in recent years on economic subjects. Many of them have been abortive. Some of them have merely aggravated the industrial evils they were designed to correct.

The fundamental error in all these legislative efforts is in the attempt to apply inflexible rules to problems and conditions that change from day to day. Nearly all labor laws, laws relating to labor prob-

lems, lack that element of elasticity needed to accommodate constantly changing conditions in our industrial life. We do not mean to say that certain broad principles cannot be laid down to guide men in the adjustment of industrial disputes. Such principles are necessary and should receive legal recognition. But when we go beyond this broad declaration of principles, and attempt to state the precise terms upon which these industrial disputes should be adjusted, we do violence to reason by attempting the impossible. It is very much like writing a court verdict in advance of a trial of the case on its merits.

There are some things the law cannot do for us.

Nor should we ask the law to do for us the things we ought to do without recourse to the law.

In some of the laws bearing upon economic problems there are elements of elasticity which make it possible to attain approximate justice in the settlement of certain industrial disputes. Such laws, for instance, as prescribe minimums and maximums, thus leaving latitude for adjustment upon the merits of each case, may be included in this class. Even these laws, however, are not altogether in harmony with

the principles of utilitarian economics, for they attempt to introduce into our economic affairs a rigidity that must always remain fatally at variance with the condition of change which is the only constant element in our economic life.

When we once recognize the basic truth that we are in a state of flux, that nothing is fixed, that everything is moving, and that, paradoxical as it may seem, change is our only constant element in economics, we will abandon all these efforts to go beyond broad generalizations in such laws as we may see fit to enact on economic questions. The recognition of this truth will rid us of many errors that now burden our industrial life and we will step up to higher levels in human relations.

Money and Wages

Difference Between Money Wages and Real Wages—Wages Represent Worker's Reward, But Not Whole Value of Service—Measure of Wages in What Worker Buys in Market—Production as Vital and Determining Factor in Fixing Wage Levels.

Lesson No. 40

Many workers, indeed it is safe to say most workers confuse *money wages* with *real wages*.

Money does not liquidate the labor cost in productive processes, or the labor cost of service of any kind. It is a mere convenience, a yardstick, in a sense, used to determine the relationship between service and reward, or between a *value given* and a *value received*.

The money in the worker's pay envelope should in part fairly measure, not the whole value of his services to industry, but that part of the value of his labor to which he is justly entitled.

To give the worker less than this would be to cheat him out of his dues. To give him more would be to cheat industry.

The money used in this transaction between the worker and the employer is, in

one sense, an order on the market for what the worker may want and need, for the worker will at least exchange a part of his wages for food, clothes, fuel and other necessities. The worker's *real wages*, therefore, must be sought in those things for which he exchanges his *money wages*, and his *real wages* may be said to be *high* or *low* according to the quantity and quality of things for which he can exchange his *money wages*.

Here once again we encounter the big problem of production.

Wages can never be high when production is low.

We here speak of *real wages*. For *money wages* may be high when the output is low.

But *real wages*, the wages with which we buy things, the wages we exchange for commodities, will be high or low according to the cheapness or dearness of the things we buy; the things we buy will be cheap or dear, according to the market supply, and the supply will be plentiful or scarce according to the output in field, factory and mine.

Thus the *real wages* of the worker, in the final analysis, must be reckoned on the basis of production.

Our experiences during the World War

ought to have made this truth plain. Wages touched unprecedentedly high levels. But we could not keep *production* up to a point that would enable us to buy more in the markets with our wages. The prices of the things we wanted and needed were also on high levels. We bought no more with high wages in war times than we had bought with low wages in times of peace, and, in most cases, not as much.

This single recent experience is enough to convince us that there is a very vital difference between *money wages* and *real wages*, and that the relation between *real wages* and *production* is not only intimate and vital, but controlling and conclusive in its influence upon wages.

Wages and Credit

Relation Between Real Wages and the Credit Structure of Industry—Worker Not Entitled to Full Value of Services Rendered—Must Return Something to Yesterday for Advances Made and Provide Something for Needs of Tomorrow—The Utilitarian View.

Lesson No. 41

Workers who believe the wages they receive should represent the full value of their services are involved in errors of reasoning that are alike fundamental and dangerous.

Wages *do not*, and, in the nature of things, *should not* represent the *full value* of a man's *services*.

If a man *is worth anything* to a plant, *he is worth more* than he takes out of it in wages. Workers who fail to realize that they must put more into industry than they take out of it are utterly blind, not only to their own interests, but to certain basic economic principles also which lie at the very heart of our industrial system.

Part of the value of a worker's services must go into what may be called a *plant fund* for these very vital purposes: (1) To meet current plant expenses not included

in the wage account; (2) to provide betterments and expansions in plant operation, and (3) to make a fair return to those who have advanced money, or extended credit in some form, to establish and operate the plant until it can sustain itself out of its own resources.

Credit extended to industrial plants is as much the concern of the workers as it is of the owners, and the financial and moral obligations imposed by credit extension in such cases must rest equally, in the final analysis upon both workers and owners. For without this extension of credit, there would have been no plant, and, therefore, no jobs for the workers employed in it.

Credit, as here used, is not confined to such moneys as plant promoters may borrow in order to launch the enterprise; it means also such moneys as these promoters may *advance out of their own funds*; for persons who, as promoters and owners of an enterprise, *put their own money* into it are entitled to as much consideration as we commonly extend to banks or other institutions, or to persons not directly interested, who may advance money to establish a new enterprise or to keep an old enterprise a "going concern."

If every person interested in industry should insist upon taking out of industry, in wages, the full value of their services, obviously there would be no fund out of which to take care of the obligations here considered. It is quite plain that such a practice would be disastrous. Workers, from a utilitarian standpoint, could hardly make a more certainly destructive demand than to insist upon the *full value* of their service in industry. It would drive capital out of the industrial field; our industries and our commerce would stagnate, unemployment, poverty and crime would rapidly increase, and we would inherit a long train of kindred economic ills.

In considering wages, and other problems in utilitarian economics, we must keep in mind the division of time into the three grand periods to which we referred in the introductory lesson in discussing the plight of the Detached Man, for always we will find the interests and obligations of Yesterday, Today and Tomorrow so intimately interwoven that we cannot consider one period without considering them all.

Today's wages are not paid out of the products of Today's work.

They are paid out of that vast and varied accumulation of things Yesterday has

passed on to us, out of the *surplus value* of *services* rendered by workers who were too just and too generous to take out of industry the *full value* of the energy and talent they put into industry; and Today's workers, in their turn, must help take care of Tomorrow's wages, and the men and women who are to do Tomorrow's work.

It is utterly vicious, from an economic standpoint, to advance the theory that Today's bills must be paid out of Today's products, and that Today's doings and Today's accounts must be confined to Today, with no sort of regard for either Yesterday or Tomorrow.

Yesterday is Today's storehouse, Today's banker, and Today must be storehouse and banker for Tomorrow.

Whoever absorbs today the *full value* of today's services makes no return for a rich inheritance from Yesterday, cheats Tomorrow out of its dues, and finds himself as penniless and as hopeless at sunset as he was at sunrise.

Not only so, but if no provision is made for expansion and betterments *out of service values* it may not be possible to provide employment for the increased number of workers in the future. Men and women are constantly arriving at maturity and

seeking employment in industry. New positions must be provided in old industries, or in new industries, to take care of these new workers, else they may become applicants for positions already filled, with the result that the general trend of wages will be downward. If wages are not lowered as the result of an oversupply of workers, the outcome will be the same, in an *indirect way*, for men and women out of work must live, and their only chance to live is to live out of the earnings of men and women engaged in productive service.

The idle man's bills, in the final analysis, are paid out of the worker's earnings. And it costs the worker more to maintain a man in idleness than it does to help provide him with a position where he can take care of himself.

There is another vital error current among workers in America and elsewhere. Workers assume the existence of a wage system and almost constantly speak of it as a system of industrial slavery. There is no such thing in America as a wage *system*. Nor is there any such thing in America as a *system of industrial slavery*.

Wages in America should not be looked upon as arbitrary exactions, wrested from

unwilling and unfriendly employers by organized workers.

Nor should they be regarded as mere gratuities employers fling to the men who work for them.

Wages, as a rule, constitute a bond of sympathy and friendship between the men who work and the men who pay. Wages cannot fairly be considered a mark of industrial bondage. Rather should we look upon wages as evidence of personal independence, personal frugality and self-reliance, and of that solid personal capacity necessary in the making of a full man.

Wages, instead of being either an exaction or a gratuity, represent the wholesome philosophy of a *lift for a lift*.

Moreover, until we can iron out some of the rough places in the American industrial system, we cannot with either accuracy or propriety, speak of an American wage system.

One of the main industrial troubles in America is that we have *no wage system*. We have instead certain disconnected labor policies and practices, all of them the result of loose thinking and hasty acting, and all of them as unsatisfactory to a majority of workers as they are to a majority of employers. These policies and practices are

wholly lacking in uniformity, consistency and stability, and are enforced without any sort of regard for either sound economics or elemental justice.

It may be doubted whether any other civilized country has a more unscientific method of arranging scales of wages than America has.

Under present practices and policies in America, as insisted upon by large groups of workers, no note is taken of the differences that exist between workers in skill, in industry and intelligence. The whole mass of a given group is raised to a common level, so far as wages are concerned, with the result that the energetic, the intelligent and efficient worker received no more for his services than the lazy, ignorant and inefficient worker.

If we had in America a wage system, based upon scientific considerations, these galling injustices in industry would not be possible.

A man's wages should be determined by the value of a man's services.

Wages and Commodity Prices

Cost of Production Determines Price Levels—Cheap Commodities Not Produced at High Wage Rate as Rule—Labor Liquidated in Terms of Commodity Prices—Fallacy Involved in Views Concerning Rise or Fall in Wages or Prices.

Lesson No. 42

Wages are a big and vital factor in the determination of commodity prices. If the labor cost of an article is high, the market price at which the article sells will also be high. Influences may intervene to alter the rule; but as a general thing *the cost of production* is the controlling factor in determining price levels.

CHEAP COMMODITIES CANNOT BE PRODUCED AT HIGH LABOR COST.

And as labor cost is finally liquidated in terms of commodity prices, it is alike superficial and untenable to assume that high wages in themselves will enable the worker to buy in the market larger quantities of what he may need or want. The fallacy underlying this popular assumption is fundamental.

There never would have been any excuse for the American tariff system if *labor cost* had not been a vital and determining

factor in fixing prices. The theory of our tariff is that the rate should equal the difference between the labor cost of producing an article abroad and the labor cost of producing the same article in America. Labor in foreign countries being much cheaper than it is in America, it has been assumed that articles produced at the higher rate of wages in America could not compete, even in the American market, with articles produced abroad and shipped to this country, unless the government imposed upon such articles a tax equal to the difference in the labor cost of producing them.

If the rate of wages paid farmer labor in our wheat fields is high; if the labor cost of milling wheat is high, and the labor cost of making and baking bread is high, the price of bread also will be high. This economic truth is familiar to bread consumers in urban centers who pay more for bread when the cost of the labor elements entering into the production of bread is high. The same rule, of course, applies to meat, clothing, fuel or any other article in common use.

These statements bring us back to the relation between wages and commodities, for, as we have seen, the worker, in the

final reckoning, exchanges his labor, not for money, but for commodities.

Labor is paid in finished things, that is in things ready for use.

If the cost of producing these things is high, the prices at which they will sell will also be high. This truth was so forcibly illustrated during the World War period that argument is not needed to emphasize it. In that period both wages and prices reached unprecedented high levels. The question as to which should first rise or fall, the wages of the worker or commodity prices, is debatable on account of the complex nature of the modern industrial system. Probably in some cases wages would be the first to go up or down, according to the general situation, and in other cases commodity prices would be first to feel the stimulating or the depression influences at work in industry.

Here again we encounter that peculiar dogmatism that marks practically every aspect of economic discussion in our time; for there are men who assert with confidence, and sometimes with vehemence, that wages should be first to respond to a changed condition, while others, with equal confidence and vehemence, assert that commodity prices should first respond to the

changing or changed economic order. Both are wrong insofar as they attempt to apply a *rigid rule* to this problem in our economic life, for here again the *rigid rule* will not work.

Besides the wage rate and commodity price levels, if left uninfluenced and unrestrained by extraneous forces, will finally recede or rise to an approximately normal relationship.

Work and Health

Workers Shielded Against Unwholesome Conditions in Modern Industry—Helpful Laws to Protect Health of Workers—Voluntary Rules and Regulations in Big Establishments—Efficiency and Health—The Sick Man Not Neglected or Outraged.

Lesson No. 43

In considering the utilitarian value of health in economics, and the intimate relation between health and work, we enter a field so familiar that it is not necessary to go further than to state a few pertinent facts.

No man can do his best work unless he is physically and mentally fit to do it.

True, in the arts and sciences many men and women sorely afflicted, some of them mentally and some of them physically, have risen to high positions. This is particularly true when we come to scan the lists of great musicians and composers, poets and other men of letters, scientists, inventors and men and women of the learned professions. This fact has caused the popular, and perhaps justifiable belief that there is class kinship between genius and madness.

But we are concerned here with the relation existing between *work* and *health* in *industry*. We know that the sick man is not as efficient in industry as the well man, and hence in modern industry we have introduced many wholesome and highly beneficial rules to protect the health of workers. We have improved the conditions of labor with a view of shielding workers from craft diseases and premature breakdowns, not solely in behalf of increased efficiency in industry, but also to prolong the worker's life and increase his happiness and general well being.

Some of these rules and regulations have been made the subject of legislation, but many of them are voluntary and have been adopted out of unselfish consideration for men and women employed in some of our large institutions. Indeed in most of our big factories and big commercial establishments we find many wholesome rules enforced, many comforts and conveniences installed, that are not required by law, but owe their existence wholly to the humanitarian impulses of employers and the men who manage their institutions for them.

This fact presents to us one of the most cheerful and encouraging aspects of modern industry, despite the fact that we too

often lose sight of it because of the bitterness of controversies having to do with other phases of our industrial life.

Such policies are of enormous benefit, not only to industry, but to the human race as well. For if they insure us better and more efficient workmen, they also make for more wholesome and happier conditions in our American homes.

Moreover, there is another cheerful and encouraging fact in this solicitude for the health of the worker, for while the average employer desires healthy workers, workers who are fit and practically normal physically and mentally, there still exists none of the prejudice which once existed against afflicted men and women. These, too, are carried on our payrolls, often despite the fact that they fall much below the standard in efficiency and in general fitness to stand up under the burdens of their employment.

This, too, has proved to be both a wise and a profitable policy, for in many instances work of the right sort, and in a right environment, has restored the worker to health, and has made of him a useful and contented citizen.

It was something for humanity to have learned that the sick man is not filled with devils; it is much more, and a much larger

step forward, for us to have learned that, in many instances, the sick man is an economical asset we can reclaim, rehabilitate and put to very good uses in industrial life.

Work very often will restore health where medicine and all the wisdom of our savants have utterly failed.

LESSONS No.
FORTY-FOUR, FORTY-FIVE,
FORTY-SIX, FORTY-SEVEN,
FORTY-EIGHT, FORTY-NINE,
and FIFTY

Work and Happiness

Contented Worker Usually Efficient and Successful—Discontent Makes For Inefficiency—Interested Work Is Pleasant Work—Happiness as the Great Economic Goal.

Lesson No. 44

Happiness, we may safely assume, is the supreme aim of every normal human being, happiness in the home, happiness in business, happiness at work in whatever useful sphere we may toil. Too often we are inclined to look upon happiness as something remote from daily routine, something in the domain of dreams, and of concern only to philosophers and poets. Yet it is *your most intimate and most immediate concern*, and mine also, for when we come finally to interpret the meaning of all our struggling and striving, all our fretting and fuming over the little and large things of the day, we find that it is all a ceaseless and feverish search for the things and the conditions we think would make us happier than we are.

Happiness is the great goal in economics, just as it is in philosophy and religion; and our only chance to attain happiness in this world is to dig it out of the work we do.

Search as we may for it elsewhere, and we will not find it. There is more truth than we have realized in the old saying that "an idle mind is the devil's workshop," for when we are idle we are discontented, often sour and cynical in our views, and in too many instances do and say those things that were better undone and unsaid.

Utilitarianism, applied to our economics, would teach us to delve deep into our work, whatever its nature, for the happiness we are to get out of life.

The slacker and the striker never get the worth of their time out of slacking and striking. We have heard much of the strenuous life in recent years, and too many persons, we sometimes fear, misunderstood the meaning of the phrase. We may be strenuous without being reckless in the use and expenditure of our energies. But we must be intensely interested in what we do if we are to get a maximum of pleasure, and, therefore, a maximum of profit out of it. The worker who is not interested in his work, and who looks upon his task as drudgery, is more to be pitied than censured, for he is really missing the essence of life. Big pay for what he does will not

supply what is missing in the life of such a man.

On the other hand the worker *who looks beyond what he earns to the thing that he does*, who makes an art and a pleasure out of the crudest of tasks, and who smiles and sings as he toils, not only rises in the esteem of his fellows, but he also pours back into his own life the honied essences of real happiness, and grows in favor as he grows in grace and easily takes his place among the successful men in his line of work.

The cheerful worker is loved, just as the cheerful giver is loved; and we are less exacting and more liberal, too, when dealing with a man who puts a little sunshine into the day's routine, for, consciously or unconsciously, he is sharing with us some of the happiness he digs out of his job.

Happiness makes for efficiency.

On the other hand the unhappy man in industry usually is an inefficient man.

By happiness we do not mean a silly-billy, careless frame of mind; but a feeling of contentment which always brings to the surface a hopeful outlook and a buoyancy of manner and speech that is at once contagious and wholesome.

What we need in industry, as well as in other spheres of human activity, is less of the things that are sour and cynical, and more of the things that are sunshiny and constructive, and we will get these things only in proportion to the happiness of men in industry, whether workers, managers or owners.

Work, Wages and Time

Unscientific Method of Dealing With Time Element in Industry—Relation Between Time, Work and Wages—Differences Between Workers in Industry—Premium on Inefficiency Where Time is Sole Measure of Service Value.

Lesson No. 45

The element of time has become so important in modern industry, and modern business life generally, that any discussion of economics would be incomplete if it did not contain a brief review of this vital factor. Many of our knottiest problems and bitterest controversies in industry center in the question of time; indeed the three problems of Work, Wages and Time are so intimately interwoven that it is not possible to consider one of them without considering all of them, for Work is what we do, Time is the period in which we do it, and Wages is what we get for what we do.

It cannot be said, we think, that we have always given *scientific consideration* to the time element in industry; on the contrary it must be evident even to the superficial thinker that we have often been *most unscientific* in our treatment of this element. No effort will be made here to fix the re-

sponsibility for the error of trying to arbitrarily prescribe the length of the workday, for, from the standpoint of utilitarian economics, it does not matter whether the idea originated with the worker or with the employer. The thing we wish to emphasize is the impossibility of trying to obtain *similar results* from *dissimilar men* in the *same period of time*, regardless of the group to which they belong in industry or business, for, as we have hitherto seen, one man frequently will do more work in eight hours, or even in six hours, than another man will do in ten or twelve hours.

In stating this conclusion we are not taking into consideration the matter of fatigue. We have in mind the *natural differences between workers*, differences in temperament, movement, energy, skill, talent and other qualities that determine the efficiency or inefficiency of workers. These differences are everywhere apparent, no matter what industrial group we may consider. It is a rather strange commentary on our methods of reasoning that we recognize the *natural differences* that exist between men in the legal profession, in medicine, and, indeed, in all the professions, but fail to recognize them when we come to deal with workers in industry. We draw

the line rather sharply between the shyster and the reputable lawyer, between the quack and the reputable physician, and between the *poor* and the *able* in the professions, and rate and reward them accordingly. And yet in industry we observe an entirely different rule by placing the efficient and the inefficient upon precisely the same footing, prescribing the same period of service for them, and giving them the same rating and the same pay.

Such is the full import of the arbitrary workday, whether it is six, eight or ten hours, and it does not require argument to convince the thoughtful man or woman that such a rule in industry is not only unscientific, but it is also unjust, for it results in *overpay*, in some cases, and in *underpay* in others.

If we had a *scientific wage system* men and women would be paid according to the *amount* and *quality of service rendered*, and not according to the number of hours arbitrarily prescribed as a workday. We are not here advocating the adoption of the *piece system* in industry, for we do not know whether such a system is either wise or practicable; we are simply pointing out one of the defects of *overstressing the time element* in industry, and the *obvious injustice*

tice of making this element almost the exclusive measure of the value of the worker's services.

As a matter of science, no less than as a matter of morals, the arbitrary workday, whether long or short, is an anomaly, and we should strive to substitute a more scientific and a juster method of rating and rewarding men and women in industry.

Work and Waste

Fight Against Waste in Modern Industries—Wasteful Workers Waste Own Substance—Time, Energy and Material Involved in Wasteful Practices—Who Pays for Waste.

Lesson No. 46

Not until recent years have we fully realized the staggering significance of waste in the industrial and commercial life of America. We are still very far from full recognition of what wastefulness means, as partly indicated, at least, in the lesson devoted to Idle Wealth; but we are at length grappling with the problem in a more serious way, with the result that in a few years, perhaps, we may be able to relieve both labor and capital of heavy losses due to wasteful practices on the part of all classes of society.

But we have in mind, at the moment, the relation between the worker and waste, for much of the economic burden of waste falls ultimately upon men and women engaged in productive labor. It does not matter whether the worker wastes time, energy or material, it will all come to the same thing in the final reckoning.

The worker's waste is a deficit in the production account for the day, and it is a permanent deficit, for no man can recall wasted time, or reclaim wasted energy or wasted material, for the same reason that we cannot undo a thing that is done, or unsay something we have said.

But, in an economic sense, this shortage in the production account will have its influence, and it may find reflection in an upward trend of commodity prices in the market, and a downward trend of wages in those industries immediately involved in the waste. While it is as impossible to reclaim the time, energy or material we have wasted as it is to restore something we have destroyed, it is a law in economics, as inflexible as a natural law, that somewhere and somehow the account must be squared. The process by which this is done is not unlike building a new house on the site where the old house was burned. It requires just so much more labor, energy and material to replace the house, and it requires just so much more labor, energy and material to make good the deficit caused by the kind of waste we have been considering.

The worker who is wasteful in his work, whether in time, energy or material, makes

holes in his own pocket, and this rule is as true of the employer as it is of the worker, for the waste account must be sponged soon or late, and the waster, whatever his position in industry, whether worker, owner or manager, must have some share in the sponging process.

We cannot waste anything without wasting some part of our own substance.

Capital's Cumulative Burdens

How Load on Capital Increases During Stages in Productive Processes—Wages of Workers Promptly Liquidated When Work Performed—Capital Receives No Return Until Sale to Final Consumer.

Lesson No. 47

In earlier studies we directed attention to the fact that *labor is always paid when the work is performed*, but that *capital* was forced to carry the burden of production cost, in one form or another, until there was final liquidation by the ultimate consumer.

The point is vital in any fair consideration of our productive processes and the distribution of the cost burden of these processes.

We wish to note further that this burden, from the standpoint of capital, is cumulative and steadily increases in amount up to the time of liquidation. The labor cost of initial production processes may be very small in comparison with the total labor cost to be summed up when the article reaches the finished state. At first, therefore, the labor cost resting upon capital is nominal only, representing what has been

paid to workers at the beginning of productive processes; but this burden increases at each stage as the article moves toward the finished state, for at each stage, from initial to final processes in production, capital has promptly paid workers for what they have contributed to these processes.

Nor, as we have seen, is capital always relieved promptly of this increased burden when the final processes of production are exhausted, for, in a great many instances, years may elapse before the finished product passes into the hands of the ultimate consumer.

Thus capital, in any supposable case, must carry the entire burden of labor cost, not merely up to the point when the product becomes a *finished product*, ready alike for sale and use, but up to the point when the user, the ultimate consumer, buys it and thus, for the first time, relieves capital of the burden.

Shallow economists do not usually regard this burden on capital as one of any great moment; yet it lies at the very heart of the credit system upon which we are bound to depend if we are to keep our industries going and labor profitably employed.

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This burden is a debt created for the purpose of paying the worker his wages in advance of the final sale of the worker's product, and as such becomes a rather sacred obligation and one which ought to be liquidated on terms fairly remunerative to the groups of men who carry it in order to keep our industries going.

Organized Society

How Men Fit Themselves Into Economic System—The Great Compromise—Mutual Concessions—Basis of Economic Rights Found in Economic Responsibilities—Lift for Lift.

Lesson No. 48

Society, in the broadest possible meaning of the word, and the individual's relation to society, make up the theme which runs through all these studies in utilitarian economics. We begin with a Detached Man, a fanciful character in no way connected with or involved in our social system. He had no place, no part in our organization; but we have made a place and defined a part for him, if he wishes to share with us the benefits and blessings of organized human society. We have outlined his duties, his responsibilities, and if we have told him what society would expect and exact of him, we have also told him what he would have a right to expect and exact of society.

It is not good for this man to be alone, just as it was not good for Adam to be alone when he fell asleep in Eden. And if Adam had to part with a rib in order to break the monotony and the gloom of personal isolation, so our Detached Man, too,

must give something in return for fellowship in the order to which we belong. We shall not exact a rib of him; but we shall exact, as these studies have indicated, *a lift for a lift*, service for service, value for value, and when we concede something to him, he must concede something to us, for *life is a great compromise*, and mutual concessions lie at the very base of organized human societies.

Economic rights cannot be asserted and maintained in organized human society on the basis of the law of the longest claw and the sharpest tooth; such rights can be asserted and maintained *only* upon the basis of a clear and active recognition of the duties and responsibilities that go with them. Rights, economic rights and political rights, always impose responsibilities, and no man is fit to exercise a right of any kind unless he is willing fully to meet the responsibilities and obligations that go with it.

Such is the fundamental basis of organized human society. Nor can organized society, at the present stage of civilizing processes, exist upon any other conceivable basis. We must give way to the law of change, to be sure, for society is in a state of perpetual flux; but change should be

normal, easy, and with due regard always for the utilitarian principle of *the greatest good for the greatest number* of human beings.

Real progress is made only when the change is in harmony with this utilitarian principle. Change which cuts into the normal flow of events, upsets the orderly processes of society, wastes vast quantities of blood and treasure, and halts the usual industrial and commercial energies of society, too often inflicts upon society injuries and hardships that are avoidable; and changes of this kind usually come because of a lack of intelligent understanding of our economic relationships, and of a failure, on our part, to meet squarely our economic responsibilities and obligations.

Luxuries

Economic Function and Value of So-Called Non-Essentials—Who Is Most Benefitted by Making and Selling Luxuries—Big Part of Pay Roll Depends on Traffic in Luxuries—When Luxuries Are Not Luxuries.

Lesson No. 49

This outline of economics, viewed from a utilitarian standpoint, would be disappointing to thoughtful readers if it did not contain some reference to the much discussed problem of luxuries.

What, in an economic sense, is a luxury?

The question is not easily answered. Sometimes what is a luxury to one man is not a luxury to another. In some instances one man's luxury is another man's necessity. It will be evident, on reflection, that luxury is a word we cannot put into a kind of verbal straightjacket by saying that to all men, and in all circumstances, it shall mean the same thing.

For utilitarian purposes we might define *anything not actually necessary to the comfort and well being of the citizen* who owns or possesses it as a luxury, though this definition is not satisfactory. However, it will afford us a sufficiently definite basis

upon which to rest a few conclusions with respect to the function of luxuries in modern industrial life.

Here again we are inclined to ask: Who derives most benefit from luxuries—*owners* or *makers*?

Luxuries often are idle, as in the case of jewelry and other personal ornaments. Take a diamond ring or necklace, for instance. The owner merely wears it. That, in most cases, is pleasurable to the wearer. But diamonds will not keep the body warm. As a fact diamonds, as ornaments, have only small utilitarian value from the standpoint of owners, and this value is an *occasional value*, for it depends upon social circumstances partly, and partly upon the moods of owners.

But persons who have expended labor in the diamond industry have realized more substantial *utilitarian values* from this luxury. It has helped them to earn a living, to meet their own obligations and to acquire and enjoy those things that mean much more to them than diamonds would mean.

That is true of any of our real luxuries, and it is true also of the vast number of things that are luxuries only in a relative sense.

It is an economic truth not always recognized that a very large per cent of our payroll depends absolutely upon the traffic in luxuries. If we should suddenly quit making and selling luxuries vast armies of men and women would be thrown out of employment. Nor would it be possible, as industry is now organized, for them to procure employment in fields devoted to the so-called *economic essentials*.

We would have to bridge over a considerable period of social and economic distress if we should force out of employment all the men and women who are now engaged in making and selling the things we sometimes loosely class as luxuries.

The conclusion is unescapable that many of our luxuries are really *economic necessities*, and we will have to regard them as such until we reach a new and diffident stage in our industrial development.

Utilitarian Values

Concluding Lesson in Series of Fifty Studies in Utilitarian Economics—"Greatest Good for Greatest Number" Discussed—Human Deficiencies—Deficiency a Tax on Efficiency—Importance of Self-Analysis—Gentler Utilitarian Values.

Lesson No. 50

In any discussion of *utilitarian values* we must take into account, not *human perfection* only, but *human imperfections* also, for the doctrine of "the greatest good for the greatest number" means something more, something larger and grander than the *greatest good for a limited number*.

There are deficiencies in the human record. Some of these deficiencies are natural, logical, and therefore inevitable. Others are avoidable. All of them are very real. Deficiency is a tax upon efficiency.

No man or woman, sound mentally and morally, and able to do a little more than hoe their own row, would care to dodge even so much as a tithe of their responsibility to help in caring for the economically deficient in our social order.

There are many types and grades of men and women on the rungs of our eco-

nomic ladder. Rung by rung, each type and each grade must make whatever headway they are capable of making in efforts to arrive at the top. That is what we mean by equal opportunity. Let men and women freely do the things they are best fitted to do, the things they like to do, the things that make them happy, and let them do it in their own way and on their own terms, unbossed by unrelated persons, uninfluenced by group affiliation, for in no other way can we realize the best there is in each individual, and thus raise the general mass of human beings to higher, more proficient and happier social and economic levels.

All men and women can never rise to the same social and economic plane. Some of them will reach the highest rung of the ladder, some of them will get little above the lowest, and all along between the highest and the lowest of our type, we will find intermediate types on rungs in between the highest and the lowest; and these, too, will fall into different grades, no two of them being exact equals in skill, strength and general social and economic efficiency. But each man and each woman, assuming approximately mental and physical normality, is a potential unit in this

economic complex, and is capable of enjoying and bestowing utilitarian values of profound meaning and benefit alike to themselves and to society.

What we should first learn in economics is the nature and extent of the *possible utilitarian values* inhering in our own natures. I ask myself: Who am I? What thing can I do best? What is the nature of my skill or my talent? Where is my place in this big, intricate and wonderful scheme of useful human endeavor? Where is my supreme work? There is a *GREAT WORK* for each of us. Our problem always is to find it. But we cannot find it *unless we first find ourselves*. We must know, not only what we are fit to do, but also our inaptitudes; for the man who knows his own limitations, his deficiencies, his mental and physical shortcomings, also knows his strength, his virtues, and falls easily into the place where he can give maximum expression to the best there is in his nature. The world is not overstocked with such men. Always and everywhere, without regard to race or country, we find men burning the taper of the candle down to the last dim flicker in vain and tragic efforts to fit square pegs into round holes.

There is but one *GREAT TRUTH* that

will make a man *wholly free*, and that is *the truth* about self!

We climb upon the scales, drop a penny in the slot, note the hand on the dial, and conclude that we are thus much, in bulk; or we read the lines of face and body in the mirror, and conclude that here we are face to face with self; but these tests do not give us even a shadowy outline of that complex of energies, of talents, of aptitude, of weaknesses and of strength that enter into the making of that wonderfully intricate and potential spark of life we speak of as self.

Many men and women go through life without once fully realizing who and what they are.

It is *good for me to know me*; not the superficial, shallow, exaggerated *me*, but the *real me*, me in the last analysis, without trappings or camouflage—me for what and all that I am in all my social and economic relations—for when I have come into this knowledge all else will be easy and well, for I shall then know what work I am to do in the vineyard, how and when I shall do it, and upon what fair terms, and will go my way happily and unafraid.

Not without purpose are we thus stressing the importance of self-analysis, for no

student can grasp the full purport of utilitarian economics, or form any fair conception of the meaning and function of utilitarian values, without first understanding self and the relation between self and the balance of mankind.

In the course of these studies we have discussed utilitarian values largely from a material point of view. Nor is this aspect of utilitarian values unimportant. But there are gentler utilitarian values also. We find them in our great philanthropies, our great benevolences; we find them in the sentiments that move us to lift the fallen wayfarer to his feet, to care for the halt, the lame and the blind, and to cherish and succor the orphaned children of the world; we find them in the confidence and fellowship of friends, in the mutual good will and cheerful comradeship of our brothers of all races, all lands and all creeds; and when we have brushed the world and its cares aside for the day, and steal away to the sweet seclusion of our own roofs, we find them again in the shining faces and open hearts of our own hearthstone, in the laughter and happiness of our children and in the tender reliance and helpful support of the mothers of our race.

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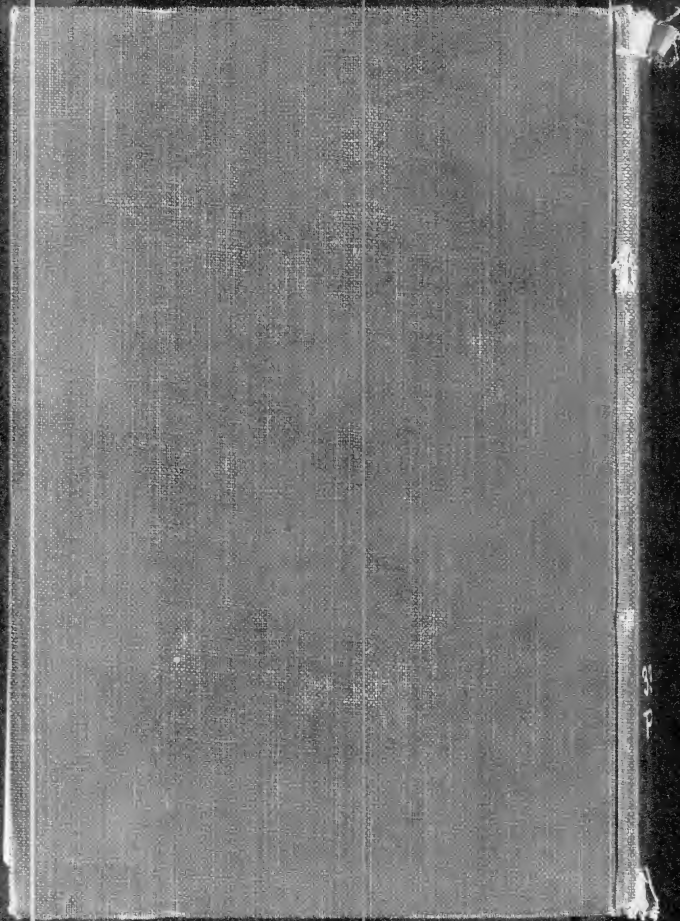
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